HARPER'S WEEKLY

EDITED BY GEORGE HARVEY

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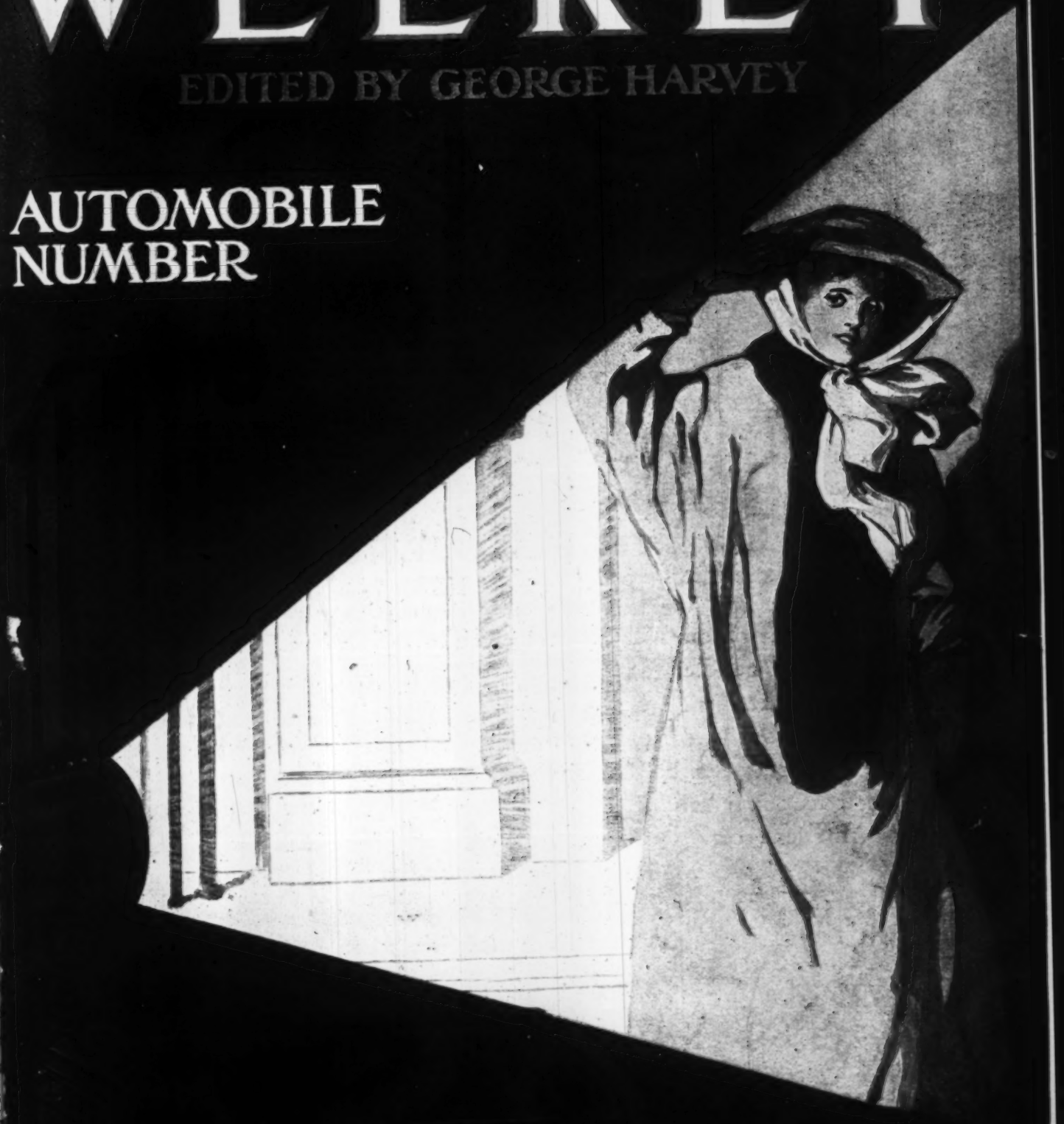

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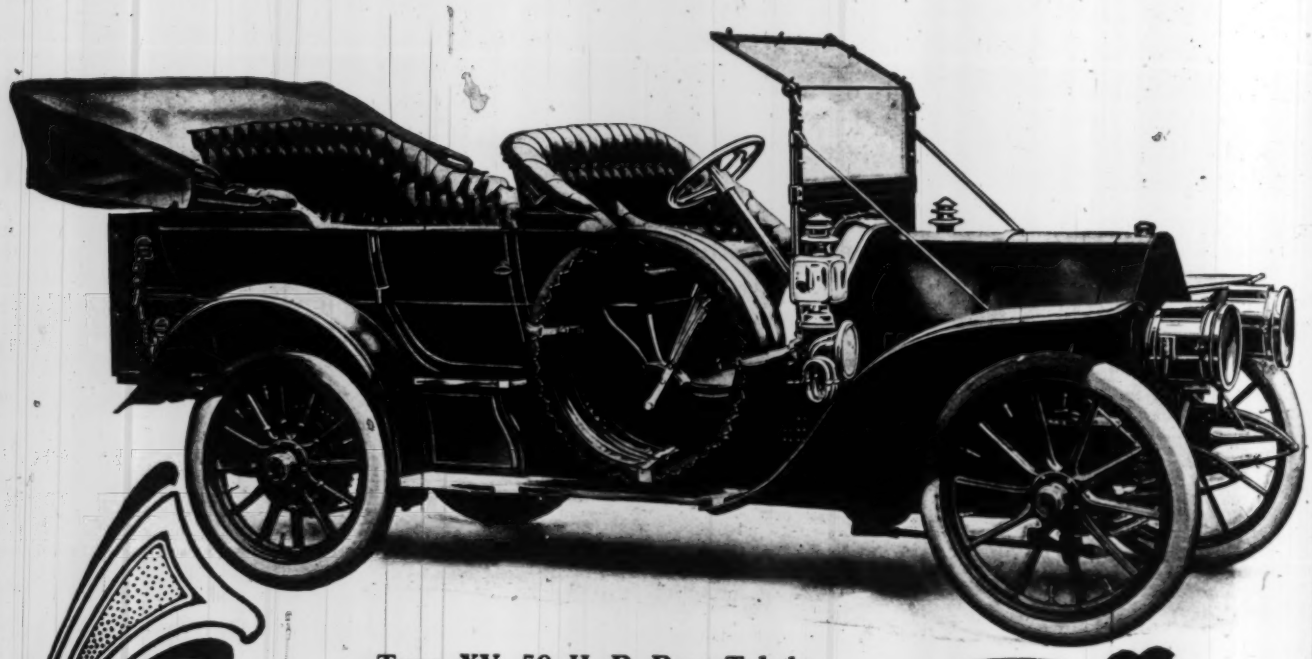

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HARPER'S WEEKLY

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Captain Lee, U.S.A. The President Secretary-of-State Root Colonel Brownell, U.S.A. Captain Ryan, R.N. Mr. Sturdy Ambassador Bryce Colonel James Mr. Howard, British Charge d'Affaires

JAMES BRYCE, THE NEW BRITISH AMBASSADOR, PRESENTING HIS CREDENTIALS TO PRESIDENT ROOSEVELT AT THE WHITE HOUSE

MR. JAMES BRYCE, GREAT BRITAIN'S NEW AMBASSADOR TO THE UNITED STATES, PRESENTED HIS CREDENTIALS TO PRESIDENT ROOSEVELT, IN THE BLUE ROOM OF THE WHITE HOUSE, ON FEBRUARY 25, IN THE PRESENCE OF SECRETARY-OF-STATE ROOT, NAVAL AND MILITARY AIDES OF THE PRESIDENT, AND THE MEMBERS OF THE STAFF OF THE BRITISH EMBASSY

DRAWN BY JAMES MONTGOMERY FLAGG FROM SKETCHES MADE DURING THE CEREMONY

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SIXTY PAGES

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COMMENT

Exit the Fifty-ninth Congress

THE Fifty-ninth Congress has come to an end, and its last session was not glorious. Its record is considered at some length on another page. Two new battle-ships have been granted, and on this achievement the country is to be congratulated and Mr. ROOSEVELT is to be thanked for his persistent and intelligent industry. The coast artillery has received an increase which gives it nearly enough men to clean the guns that are in place, but not quite enough to provide one crew for each gun. Stimulated by the San Francisco School Board and by the President's desire to avoid a difficulty with the State of California and the labor-union, Congress has increased the difficulties of Japanese immigration. The trouble is that California continues to believe that it has the right to deny to foreigners their treaty rights, if they have any. Congress has also made the jobs of cabinet officers, the Speaker, and the Vice-President, and its own job, more profitable—properly—by increasing salaries. It has passed an act allowing government appeals in certain phases of criminal cases—a law of such a nebulous character that accused persons need not fear and government will not rejoice. A service pension act has been passed. Nothing has been done for the Philippines, whom we rule with a paternal hand while we deny them admission to the father's business house. On the whole, it has not been a great nor a good Congress, but it has arrived at one distinction—it has been the most extravagant Congress known to history.

The Trouble with the Canal

The President and Secretary TAFT are having trouble again about the canal, and so long as the work endures there will doubtless be opportunities for adverse criticism and for sad reflections. This is mainly because government is undertaking to do the work. Recognizing the comparative ineffectiveness and dilatoriness of government work, Mr. SHONTS favored the building of the canal by contract. He said, and said truly, that the contractors of the country possessed the tools, controlled the skilled labor necessary, knew how to get the most economical unskilled labor, and, in brief, could be making the "dirt fly" while the government was looking about to find the necessary men and to procure the needed tools. Bids were offered by contractors, and then came a quandary. One company of bidders—the OLIVER group—was very much under all others. The next wanted more than twelve per cent. profit, and the OLIVER people about six per cent. Experts say that twelve per cent. would be about fair, considering the hard circumstances of the work, but how was the government to reconcile the people who would ask questions if the larger bid were accepted? As the President did not like some of the features of the OLIVER bid and concern, all bids were rejected. This is the kind of thing a government does in a business transaction. A private citizen or a corporation would probably have accepted one bid or the other, having business instincts, being intent on getting the work done at the earliest possible moment in order that earnings might begin, and not being under the necessity of consulting the people. The government is forced, on the other hand, to consider the people, it must be borne in mind, because the people's representatives control the purse-strings. And so the most effective way of building the canal seems to have been abandoned. That strong men cannot work to their own satisfaction under government control seems to be demonstrated by the successive resignations of Mr. WALLACE, Mr. SHONTS, and Mr. STEVENS. Despite all the reasons given to the public for those resignations, dissatisfaction with hampering, obstructive, exasperating governmental control formed a large element in each one of them, and this is not necessarily a criticism either of the President or of Secretary TAFT.

Sore Experiences Ahead

Apparently the work of canal-building is now to be taken up by the engineers of the army; in other words, government is to do it itself. The army engineers will be honest and efficient; they will maintain the remarkable reputation of their corps. But they will be annoyed, retarded, criticised, unjustly in many instances, and will be unduly blamed for the cost of the work, which is bound to be at least three or four times greater than the estimates. Congress will be niggardly, as it always is in providing money for the carrying on of great works, and a great deal of money and much time will be wasted on account of this niggardliness. In a word, we are about to have, on a grand scale, a repetition of experiences to which the engineers have become accustomed in their work on river and harbor improvements. The great cost of the work, too, will be a serious disappointment to the people, and will call forth much criticism, from which those who are spending the money will often unjustly suffer. It may be that this increase of cost will enter into political campaigns and will furnish food for demagogues. That the canal will cost more, much more, than the estimates, is known, and has always been known, to many men in authority. Here again we have an illustration of the weakness of government in carrying on great enterprises. It is afraid to face the facts; it dare not take the people into its confidence. Cost what it may, however, in time or in money or in human life, the country will carry the canal to completion; but we might as well, first as last, recognize the fact that we are to have sore experiences compared with which those from which we have already suffered are nothing.

Oklahoma's Constitution

A telegraphic despatch has stated that the Oklahoma constitutional convention will not insert a "Jim Crow" provision in its Constitution, because it fears if it does that the President will not approve the instrument; that he will not admit the State into the Union. The despatch or the convention must be in error. The President of the United States has no more power to refuse admission to Oklahoma for this reason than to expel such of the Southern States as have like provisions of law. By the law of 1906, Congress has already enacted that Oklahoma shall be a State on adopting a Constitution establishing a government "republican in form." It has made the President the judge as to whether this condition has been actually complied with, and it has given him no other power. To say, or to fear, therefore, that the President may refuse Oklahoma admission to Statehood is to accuse the President of ignorance of the meaning of the phrase "a republican form of government." That a government may remain republican in form and still have a "Jim Crow" law has been so often decided as to be beyond question. Possibly the explanation is that the Oklahoma convention, if the despatch be true, does not really believe that the President desires to be an arbitrary ruler, unmindful of the legal limitations upon his power, but that it does not sincerely desire to obey the constituents of its Democratic majority and insert the "Jim Crow" provision. In such an event it would be natural for it to attempt to throw

the onus on the President; but assuredly Mr. ROOSEVELT has no such despotic notions as this would suggest.

The Country and the Railroads

Many of the States have joined the Federal government in making war upon the railroads—a war which, it must be confessed, the railroads have done a good deal to invite. It is much too early to discuss the results of this war; such results, in all their ramifications, are very distant, and it will always be too early to make specific predictions. It is inseparable from any such movement, economic or industrial or fiscal, that the war will be carried to a certain degree of excess; that is, those who have been guilty of wrong-doing will not only be punished, but their power of service will be crippled. Those commentators who sneer at the railroads for expressing fears of undue damage or for preparing for curtailment of service are not wise friends of the community. Admitting, as every one must, that justice to the community and respect for the laws require the punishment of railroad offenders and the enforcement of the laws providing for fair service to all, it must yet be recognized that hostility to railroads may find expression in legislation which will injure the roads not only as dividend-earners, but as servants of the people. When the roads, in response to the two-cent-fare laws which have been passed by several of the States, say that eighteen-hour and other special trains must be withdrawn, and that certain special fares, like excursion rates, can no longer be granted, abuse and sneers are no answer. It may be that the railroad men speak in anger and disappointment, but they nevertheless do not speak without warrant. That the country will pay something for its justice cannot be doubted; that it will pay more for excesses, natural and reasonable though they be, is certain. All public writers and others who encourage excesses by sneering at or denouncing all pleas for the roads, and all predictions of evil and useless consequences from undue castigation, are foolish friends who, whatever else may be said of them, are not helping to a just settlement of the relations between railroads and the rest of the community. The country, of course, will not long continue without the exceptional services which railroads have rendered and for which we are all willing to pay a fair extra price, and what serious-minded and just men should aim at now is to bring about proper control of the roads while injuring their effectiveness as little as possible. Especially should we avoid the promotion of the pernicious doctrine of state ownership.

The Senate Loses Mr. Spooner

The departure of Mr. SPOONER from the Senate deprives the administration of one of its ablest advocates in Congress; indeed, on questions of law, especially of constitutional law, Mr. SPOONER is by far the ablest disputant on the Republican side. It is an open secret that Mr. SPOONER has not always agreed with the President on the subjects that are bound for some time to come to continue in the arena of public debate—the constitutional powers of the Executive and the relations between the Federal government and the States. It was clearly understood, for example, that Mr. SPOONER did not agree with Mr. ROOSEVELT'S original proposition that the Federal government should fix railroad freight rates, nor with the developed proposition that there should be no judicial review of decisions upholding changes of the rates established by the roads. It is presumably the fact that if the administration had not met Mr. SPOONER'S views, no rate bill would have been passed. More recently the President recognized Mr. SPOONER'S usefulness as an advocate in the Brownsville matter by withdrawing, because it was unconstitutional, that part of his order which excluded the dismissed negro soldiers from civil employment in the future. Mr. SPOONER is, therefore, a man of remarkable power; power of mind and character; and the present Senate does not differ from its predecessors in not being able to afford the loss of such a man. He has helped the President over many hard places, and at the same time he has been of great service to the country. The Wisconsin Republicans have no man who can take the place which he leaves vacant, and the legislative majority has no inclination to give the country a man like him. A valuable and patriotic man is lost to the public service, partly because there is no place in our public service for a poor man of Mr. SPOONER'S ability and talent, and partly, perhaps, because public life in the near future might have become extremely disagreeable to him.

The Coming Duma

The new Russian Duma will not be controlled by real radicals, but by Constitutional Democrats. It is apparent that it will be opposed to the reactionaries by a two-thirds majority, and that it will be in favor of a constitutional government, perhaps limiting the powers of the Czar no more than he agreed to as appropriate in his celebrated manifesto. At any rate, the best-informed English opinion—and England has the advantage of the opinions of its resident Russian revolutionaries—is that the Czar, if he will exhibit tact and patience, and will not expect the representatives to obey the ministerial policy, will help to the establishment of responsible government without any popular outbreaks. At the same time the representatives of the Russian peasants who are visiting this country, partly for the purpose of securing money aid for their cause, expect trouble. GREGORY GERSCHUNI, the Russian terrorist, says that the new Duma will not go away, as the first did when it was dissolved, but that "they will proclaim the government a pack of usurpers; themselves the government. They will say to the bureaucrats, 'Go!' They will say to the Czar, 'Go!'" Mr. ALADIN, the peasant leader in the first Duma, is more moderate, saner, and probably more authentic. He says that the work of the new Duma will be to "crystallize the aspirations of the Russians in the form of laws, and to present these laws to the State's Council and the crown, leaving the latter to decide as to the necessity of a conflict or a peaceful solution of all the outstanding questions." At any rate, it appears to be evident that the new Duma is determined to accomplish something for the establishment of responsible government, and it is certain that the reactionaries will do their utmost to persuade the Czar to prevent the overthrow of the autocracy.

Nicaragua and Honduras at War

The war between Nicaragua and Honduras goes on without apparent varying fortunes. As a war, this country is not much interested in it, but we must regret the failure of the well-considered efforts for peace which were led by President ROOSEVELT and supplemented by President DIAZ and by several other Latin-American governments. At the same time, as we have already said, the incident was not only creditable to the country and the President, but it illustrated the importance of Mr. ROOT'S recent visit to South America. One other consequence of the conflict is the decision by Attorney-General BONAPARTE that people in this country have the right to sell arms to both, or to either, of the belligerents. This is old law, but its assertion is sometimes doubted when popular passion is aroused; and when Mr. HAY announced it when it inured to the advantage of Great Britain during the Boer war, he was called an Anglomaniac by a good many people who might do well to ponder on Mr. BONAPARTE'S decision in the Nicaragua-Honduras controversy.

Mr. Harriman's Case

Public attention in the week in which February closed and March began veered away from the THAW trial and centred upon EDWARD H. HARRIMAN. There was nothing left to be settled in the THAW trial except the fate of THAW (which has all along been a matter of secondary interest), and in the opinion of the public no engrossing degree of uncertainty remained even as to that. Mr. HARRIMAN'S case has seemed vastly more important and much more interesting. He is a man of the rarest abilities, whose services to the industrial side of our civilization have been of a value so great as not readily to be calculated, and whose mental processes have been so intricate, so penetrating, and so effectual as to make them eminently fit to study and in very many particulars to admire. The gist of the inquiry about Mr. HARRIMAN has been as to his methods and purposes; whether his methods have been upright and his purposes lawful and proper. His testimony before the Interstate Commerce Committee has brought his whole career up for judgment. The newspapers and men in their private talk have sat on his case, and have given in a verdict which, though not unanimous, represents a very remarkable unanimity of opinion. It is not a verdict to which a man of his qualities

can possibly be indifferent, for it is very far from being favorable. That he has broken the law in any case has not yet been demonstrated, nor even that he has done worse fiscal exploits than men have done before him without being either sent to jail or ostracized by their social peers. The verdict is simply that he has shown himself to be unscrupulous, voracious, and insatiable beyond even the ample wont of that region below Canal Street where the interpretation of the commandments is so liberally qualified by commentaries, quoted precedents, and *res adjudicata*.

A Working Man's Errors

There is that about Mr. HARRIMAN that makes one lament this verdict and hope that it will not stand. It is not only that his hat covers the best equipment of railroad brains, except one, in the country, but that in so many particulars of deportment and achievement he has been admirable, that one mourns to find his record befouled with incidents of indefensible predacity. We do not share the opinion that his great fault has been mere greediness for money. He has indeed wanted money—lakes of it—but he has seemed to want it chiefly to use as a tool to make his dreams come true, and to enable him to carry out the plans which have taken shape in his remarkable mind. We mistake the man if he cares especially, so far as personal indulgence goes, whether he has three million dollars or three hundred million. Indulgence is not his foible, nor do we think acquisitiveness is his vice. His play is work, like ROLLO'S, and his use of money is to give him power to do the things in the railroad world that in his judgment are crying to be done, and must be done, first or last, in the interest of all the people. If we judge Mr. HARRIMAN rightly, a railroad is primarily of far more interest to him as a machine to haul goods and passengers to the best possible advantage than as a machine that will yield vast riches to the man who controls it. Yet he has grabbed at the riches at every chance. True, but he could not have accomplished what he has accomplished if he had not grabbed them. To our mind he is a CECIL RHODES kind of a man, who cares not unduly for money as an end, but finds it an indispensable means.

Make Him Build Our Canal

He has overdone his job. He let his mind get the start of his compunctions, and in his ardor for achievement his judgment of right and wrong in methods has been obscured. He is a sinner, and so are the rest of us, but his sins look exceptionally heinous to us because they have been so enormously profitable. Moreover, he has let nobody stand in his way, and while he has shown himself skilled in addition and multiplication, he has consulted his own purposes in the matter of division. So he has few friends, and the pack that is after him is a big one and unusually vociferous. The kindest and perhaps the fairest thing that can be said about him is that he has been Napoleonic both in his aspirations and in his superiority to scruple. But that won't do. NAPOLEONS are too dangerous. It is not so much that they break too many eggs, as that the omelet when they get it done is apt to be their omelet. Mr. HARRIMAN has made an omelet, but it is too much his. We wish he could be employed to make one for us. He ought to do penance for his misdeeds, and the particular penance we would choose for him would be to build the Panama Canal. If he could be put in charge of that, we would be willing to lend him the key of the United States Treasury, and ask him no more than to leave us the change when the job was done. We think that course would save our taxpayers several hundred million dollars, and the best possible canal would be built, and built in the least possible time. If it should turn out, when the canal was done, that the builder owned the whole of South America and had a blanket mortgage on Mexico and the United States, we would still have in Guam an island suitable for the residence of a man too smart to be left around. But we don't think he would ever have to live in Guam. Give him work enough of the right sort and he would be a safe man, and there is quite a bit of work in that canal.

Philosophical Reflection

When competent private enterprise does a job of work there is usually a profit, and the doer wants it. When public enterprise does the work there is usually a loss, and the taxpayers share it. Curiously, the average taxpayer seems readier to share the loss than to concede the profit.

The Record of the Fifty-ninth Congress

IN apportioning the credit or the blame for the achievements and shortcomings of the Congress which came to an end on Monday, March 4, we should bear in mind that of the 90 Senators the Republicans had 58 and the Democrats 32, while of the 386 Representatives there were 248 Republicans and 136 Democrats, with two vacancies. The proportion should be heeded in view of the fact that in the Sixtieth Congress, up to the time when the five Representatives and two Senators of Oklahoma are admitted, the Republicans will muster 222 and the Democrats 164 in the Lower House, whereas in the Senate there will be 61 Republicans against 29 Democrats, the former thus acquiring more than two-thirds of the votes. From the figures named an erroneous deduction might be drawn as to the effect produced upon the public mind by the record of the Fifty-ninth Congress. By no means do the Republicans get all the credit of it. The record is divided into two sharply contrasted parts corresponding to the two sessions. Almost all of the work which is likely to make the now defunct Congress long remembered in our Federal history was accomplished in the first session, and it was brought about by a combination of President ROOSEVELT with both the Republican and Democratic members of the Lower House against the influences which previously had been dominant in the Senate, and which, in the Fifty-eighth Congress, had succeeded in postponing the railway legislation desired by the Chief Magistrate. The three memorable laws placed upon the statute-book during the first session, which began early in December, 1905, were the act enlarging the powers of the Interstate Commerce Commission (commonly known as the railway-rate act); the act making an appropriation for the Department of Agriculture to provide for meat inspection from hoof to can at government expense; and, thirdly, the act for preventing the manufacture, sale, or transportation of adulterated or misbranded or deleterious foods, drugs, medicines, and liquors—the act generally known as the pure-food law. It is tolerably certain that the railway-rate bill, and it is at least probable that the meat-inspection bill and the pure-food bill, would not have become laws in their present form had not the President been supported by almost all the Democratic Senators and Representatives, by almost all the Republicans in the Lower House, and also by a considerable minority of the Republican Senators. Under the circumstances, the credit for the remarkable legislation cannot be claimed exclusively by either political party, and cannot, therefore, figure as a campaign issue in the next Presidential contest. Outside these three epoch-making statutes, the most important legislative work performed during the first session of the late Congress was the act providing for the construction of a lock canal connecting the waters of the Atlantic and Pacific oceans; the act providing a uniform rule for the naturalization of aliens throughout the United States; the act enabling Oklahoma and Indian Territory to enter the Union as a single State, and providing also that New Mexico and Arizona might be admitted on the same terms, provided each Territory should separately vote for joint Statehood; an act for the withdrawal from bond, tax free, of domestic alcohol, when rendered unfit for beverage or liquid medicinal uses by mixture with suitable denaturing materials; an act appropriating two million dollars annually for increasing the efficiency of the militia and promoting rifle practice; an act providing for the reorganization of the consular service of the United States; and, finally, an act appropriating $25,000 annually for the travelling expenses of the President of the United States. As regards the three statutes of capital moment, the railway-rate act, the meat-inspection act, and the pure-food act, it was taken for granted that they might need amendments, which would be forthcoming, it was supposed, during the second session.

The expectation has not been fulfilled. The Fifty-ninth Congress, which, in its first session, was dominated by the President and the so-called radical reformers, fell back, in its second session, under the control of "special interests," owing partly to a certain reaction of public opinion against Federal interference with business heretofore transacted by private corporations or individuals. During the summer or autumn of 1906, an impression gained ground that, for the present, at all events, no further steps ought to be taken in that direction. This, notwithstanding the fact that the President's personal popularity has not been perceptibly impaired, while his political activity has never been greater, more than forty messages having been sent by him to Congress since the second session began. The result of the slight change discernible in popular sentiment has been that nearly a dozen reform measures have been killed during the last three months. For example, Senator BEVERIDGE has failed to secure the passage of the amendments which he tried to add to the meat-inspection law. One of these amendments aimed to make meat-packers pay the cost of inspection, which now rests on the Federal government, while the other required every label to bear the date at which the goods labelled were canned. Congress also refused to sanction the bill permitting the Federal government to establish food standards, in the absence of which the enforcement of the pure-food law is difficult. The Federal legislature even declined to

ratify the measures urged by the President for the protection of the public lands, and providing for the prosecution of fraudulent entries hitherto made on the public domain. Where Mr. Roosevelt was unable to carry his point, it was scarcely probable that Senator La Follette would succeed, and we need not, therefore, be surprised that the latter's bill authorizing and directing the Interstate Commerce Commission to make valuations of railroad properties, for use as bases of taxation, did not find a place upon the statute-book. Miscarriage also awaited another bill of his reducing by $7,000,000 the amount paid to railroads for carrying mails. A similar fate befell a bill framed for the purpose of stopping express companies from engaging in the business of buying and selling merchandise. The distillers and brewers were strong enough to defeat Representative Littlefield's bill giving States complete jurisdiction over liquors brought within their borders. The influence of the Standard Oil Company is alleged to be traceable in the frustration of the bill allowing farmers to manufacture denatured alcohol. It is hard to realize that all these proposals were rejected by the very same Congress which, during its first session, passed the railway-rate bill, the meat-inspection bill, and the pure-food bill.

It must not be inferred that the President considers the session of Congress just ended as entirely unprofitable from his point of view. He is reported to have been elated at the passage of the amendment to the immigration act authorizing him to exclude from the American mainland Japanese or other laborers whose passports do not show that they were authorized to proceed directly from their native country to the continental territory of the United States. He found much satisfaction, too, in the sanction by Congress of his desire to build two big battle-ships. Scarcely less gratifying should be the Senate's ratification of the Santo Domingo treaty in its revised form, whereby the President's appointees are authorized to collect and apportion the customs revenue of the Dominican Republic for an indefinite period. The Philippine tariff bill was blocked, and the bill giving the government the right of appeal in certain criminal cases was whittled down almost to nothing in the Senate. The eight-hour bill, the anti-injunction bill, the child-labor bill, and the bill to confer citizenship upon Porto Ricans all failed to pass. On the other hand, Congress, having raised the pay of Senators and Representatives from $5000 to $7500 a year, voted also to increase the pay of the Speaker, the Vice-President, and the cabinet officials, including the Secretary to the President. The pay of almost every postal employee throughout the country has likewise been augmented, but, feeling apparently that it must stop somewhere, Congress declined to increase the pay of the government clerks employed in the departments at Washington. We observe lastly that it is no longer necessary for an ex-soldier to prove that he incurred any disability through service under the colors. All he now has to show, in order to get a pension from the Federal treasury, is that he is sixty-two years old and served three months in the civil or Mexican war.

Personal and Pertinent

This is a Russian year in the musical circles of New York. First of all, there is a Russian bringing the Philharmonic Society into greater favor than it has enjoyed since Seidl's day, upon whose death many of the German lovers of music feared that the end of tune and harmony had come. Safonoff is dragging the music out of the band with his two hands, and at the same time, and by the same physical-culture movements, he is tearing at the heart-strings of musical young women, who lunch in his presence, and in the presence of good food, but on melodious ecstasy.

"I told him," said one young luncher to another, "that he had rejuvenated the old band by ten years."

"And I," triumphantly replied the other, "told him that he had recreated it."

The other day, or night, a gentlemanly young Russian named Scriabine listened, in a box at Carnegie Hall, to a performance of his own symphony by the Russian Symphony Orchestra. The house went Russian mad. When the audience was going out one distinguished musical young woman was heard to ask a critic—professional: "What is that Duma that the Russians are composing; is it a chanson or a suite?"

How certain individual lives keep on moving together, parallel to one another or crossing one another! It seems as though they could not get apart, as though they attracted one another. There are, for instance, Senator Julius Cæsar Burrows, of Michigan, who has just made the principal speech against Smoot, and ex-Senator Arthur Brown, of Utah, who was recently killed in Washington by a lady who wanted him for a husband. Thirty-four years ago the two were practising law together in Kalamazoo, Michigan, and Brown was a very successful lawyer. Burrows was an orator; in his youth he was known as the "Columbian Orator." This was the title of a little book of eloquent extracts which the boys used to declaim on Friday afternoons. Burrows wanted to be a Congressman and Brown helped him. He was elected in 1872, and he was defeated in 1874 because he favored inflation. Once again he was defeated, but, with these exceptions, he has been continuously in public life, part of the time as Representative and part of the time as Senator. Brown rather sternly dealt with Burrows at times, but one day Brown made a false step at Kalamazoo and the two lives seemed to separate, for Brown thought that the air of Salt Lake City was more wholesome for him than that of Michigan. But the two came together again as members of the Senate, and at last Burrows got unduly mixed up in a question most interesting to Utah, and was fighting Smoot and polygamy when Brown came to Washington to be shot. The wayward, meteoric, far-shining Brown flashed into Burrows's life from time to time, a life that became, notwithstanding those flashes, more and more conservative, so conservative that the taint of oratory was long ago washed out of it, and Burrows has grown to be an industrious, hard-headed man of business who knows how to keep his seat in the Senate, while Brown did not know anything much to his advantage except how to win lawsuits.

Secretary Shaw is to be the president of the Carnegie Trust Company instead of Secretary of the Treasury. It may be worth while to allude to Mr. Shaw as a disappointment, not at all by way of criticism, but in order to indicate how a President's judgment may not always be sure-footed. Mr. Shaw was regarded in Washington as an independent Republican, tainted a trifle with free-trade spots. The President's desire to change the McKinley cabinet rose first from friction with Lyman Gage. On Mr. Gage's side there was felt, and manifested, some restlessness because the President, then new, was not observant of official etiquette; he was accustomed to communicate directly with subordinates, and Mr. Gage, on consulting the Treasury book of etiquette, discovered that this was a slight on him, because the President should have communicated indirectly with the subordinates through him. On the President's side, it was thought that Mr. Gage knew only the banking side of the Treasury, and the President needed some one who understood the tariff and was in favor of a revision that would reduce duties. It will be seen how far back, in thought, this episode is. The President was especially congratulated on selecting Shaw, because now he would have a well-informed Secretary who would sympathize with his expectation to secure tariff reform; and, besides, the President thought him so large-minded, so generous, so independent a politician. "Why," said Mr. Roosevelt, "I have always felt particularly attracted to him since he said in a speech that this country 'walked out of a slough of despond on the backbone of Grover Cleveland!'" However generous-minded and independent Mr. Shaw may have remained, he, too, has been a public banker, as Mr. Gage was, while he has allowed it to be understood that, on the tariff, he is the Bourbon while Governor Cummins, his party opponent, is the man who is for what was expected of Mr. Roosevelt.

The suggestion that Senator Blackburn is to be a member of the Isthmian Canal Commission could not have surprised those who recall the selection of Mr. Cockrell for the Interstate Commerce Commission—and there are others. Mr. Blackburn was always intent upon doing his duty to the executive department. In Kentucky they describe him as a "good mixer." He is the genial friend of all classes and conditions of men. In Washington, the air of his committee-room still reels with his admirable stories, the point of each one being inevitably salient. He was one of the best judges of horse-races that a kind constituency ever sent to Congress, and a Republican President found him as companionable and as amenable to reason as his own party associates felt him to be. He was even on good terms with the Cleveland administration during those strenuous times when many Democrats in Congress would have nothing to do with the occupant of the White House or his cabinet. Especially friendly was Blackburn with the Kentucky Secretary of the Treasury, whom he called "John Carlisle," and from whom he was willing to accept dry and choking facts which he needed for his oratorical embroidery-work. He was one of the Silver Democrats who were filibustering under the leadership of two then Republicans, Teller and Dubois, to prevent the passage of Cleveland's "unconditional repeal bill." But Blackburn was not in favor of obstinately standing in the way of the appointing power. Too much of the current business of a Senator—and of his constituents—depended on his retention of its friendship. So he talked the matter over with his friend John, who found the Senator reasonable, and John furnished him with mental food. Blackburn then, incidentally, attended the meeting of the Confederate veterans in Kentucky, and then, coming freshly from his people, he made a remarkably able speech in favor of abandoning the filibustering and of permitting a vote to be taken. Then envy spoke. A Senator who could have made no such speech said that, "for a man who never thought and never read, Joe was the ablest orator in the country." Soon afterwards Blackburn had a serious falling out with John Carlisle, not about a transitory thing like the silver question, although that might serve as fuel, but about a deeper, more momentous, more sleep-dispelling subject—about an appointment in the Treasury Department.

EXPERIMENTING WITH AUTOMOBILE TIRES

By WILFRED DUPUY

THE pneumatic tire was undoubtedly the most important invention which had to do with the development of the automobile, for without it the touring-car, as at present used for pleasure purposes, would not have been a possibility. The reason for this is not merely that the pneumatic tire gives comfortable riding qualities to the car, but that, by its absorption of the small inequalities of road surface, it saves the motor and mechanism from an enormous amount of vibration. The question might be asked whether solid rubber tires would not serve as well for use in districts where the road surfaces were comparatively smooth. These can be used satisfactorily up to speed of fifteen miles an hour, but beyond that they are impracticable, no matter how smooth the road.

It is a well-known fact that if an object be allowed to drop in the air, after it has attained a certain speed the resistance of the air will equal the acceleration due to the force of gravity, so that the speed of the object will not increase beyond a certain limit. The drag of solid tires against the force of the motor acts somewhat in the same way. The higher the speed the greater the power necessary to lift the wheels over the small inequalities of road surface, until finally a limit of speed is reached at which all of the power is consumed. This limit is comparatively low. By experiment it has been found to be practically impossible to drive a car faster than twenty-five miles an hour on solid tires, even by using engines of very high power. This would certainly not suit the modern motorist. But of much greater moment than the reduction in speed would be the racking of his nerves and the wear and tear to which the mechanism of the car would be subjected.

Many attempts have been made to imitate the action of the pneumatic tire by the use of spring wheels, pneumatic hubs, etc., but up to the present time with indifferent success. While these devices take up the vibrations transmitted to the wheel to a certain extent, they do not provide a cushion at the place where it will be most effective, viz., in contact with the road. They act as delicate springs in decreasing the force of shocks borne by the wheel, but do not *absorb* these shocks, as does the pneumatic tire. Inequalities and small obtacles sink into the tire, so that the wheel does not require an extra amount of power to lift it over them. For this reason it is very doubtful whether a practical substitute for the pneumatic tire will ever be discovered.

With the phenomenal increase in the production of automobiles during the past six years there has been a like increase in the output of the tire manufacturers, so that the available rubber supply of the world has been seriously affected. Imports of crude rubber into the United States alone last year amounted to $50,000,000, a considerable proportion of which was employed in the manufacture of tires.

The rubber factory which undertakes the manufacture of automobile tires requires an elaborate and expensive equipment, consisting of washing-machines for the crude rubber, mixing-mills for combining the rubber with sulphur, zinc, litharge, and other ingredients which influence the vulcanizing process and serve to give strength and wearing qualities to the finished tire. Huge calendar-rolls are required to roll the rubber into sheets of the proper thickness to be used in building up the tire. Whole rows of great hydraulic presses, heated by steam, are used for vulcanizing the tires after they have been placed in the moulds. The number of the latter which must be kept on hand depends only on the demand for tires of each size and type.

Before being placed in the mould the tire is built up by hand on an iron form. The layers of fabric coated with rubber are laid on first of all, being drawn tight over the tread and worked down over the "bead." When the plies of fabric are in position and rolled smooth, a sheet of rubber is laid on to form the cover. If the tire is to have a moulded tread the latter is formed by being built up of layers of rubber to the proper thickness. If a "wrapped tread" is to be put on, the tire is moulded with only the cover in place, and after being removed from the mould has the tread wrapped upon it with cloth and vulcanized.

Tires should be allowed to age for a certain length of time before being put into use. During this time they "bloom," that is, become light gray in color, due to the action of the air on the sulphur contained in the rubber. The process of aging requires from three to six weeks, during which time the rubber acquires a certain firmness, which adds to its durability.

The number of different types of automobile tires is constantly increasing, each type being designed to overcome certain difficulties. The most common design has been the wrapped tread, or the round-moulded tire; but of late the flat corrugated tread has been increasing in popularity. The latter is heavier than the ordinary tire, and should prove more reliable. In addition to these, there is the tread studded with rubber knobs, and one having transverse notches. These two types are designed to prevent skidding, and are effective to a certain extent when new, but after a few hundred miles of travel they are worn so smooth as to lose whatever non-skidding qualities they may have once possessed. The tire which has so far most successfully prevented side-slip has embedded in its tread several rows of steel studs, the heads of which grip the road so firmly as to assure positive traction. The heads of the studs rest either directly on the rubber tread of the tire or on a strip of specially prepared leather. Their bases are held firmly by several plies of strong fabric. In addition to its prevention of side-slip the wearing qualities of this tire have been unusually good, and it is practically puncture-proof, except through the side wall. The popularity of this tire has been largely increased by its successful use on foreign racing-cars during the past two years, where the strain to which tires are subjected on account of the great speed attained is unusually severe.

The motorist whose tires do not afford the proper service is usually too much given to placing the blame upon the tire manufacturer rather than upon his own ignorance or carelessness. It is too much to expect that tires will not deteriorate and give out when the user exercises no more judgment in caring for them than if his car were equipped with ordinary iron-tired wheels. To obtain satisfactory results in the use of pneumatic tires every motorist should familiarize himself with the instructions and rules for their care as laid down for his guidance by the manufacturers. These rules have been evolved from an intimate acquaintance with the action of rubber under various conditions, and after exhaustive experiments with tires to determine, as far as possible, the causes which bring about their disintegration. Some motorists, being familiar with the rules, disregard them, in whole or in part, either because it is too much trouble to see that they are followed, or because of the belief that, even if they are ignored, little if any injury will result to the tires. If they could be made to understand how apparently trivial things often do great injury to their tires, resulting in annoyance and expense to themselves, they would cease disregarding these instructions in even the smallest particular. For instance, lowering the air pressure ten pounds per square inch, or allowing a tire to stand in a pool of oil or gasoline for a few hours, will often work irreparable damage.

The automobile manufacturers have not been blameless in the matter of providing tire-trouble for the motorist. This has not been due to the selection of tires, but to the construction of the automobiles themselves, which have very often been of too great weight and power for the tires, of the size fitted, to support. Each size tire is guaranteed by the manufacturer to carry only a certain weight, and when this weight is exceeded trouble naturally follows. The catalogue weight of an automobile, which takes no account of water, gasoline, and equipment, often differs largely from its weight when ready for the road. Thus the surest way in which to determine whether or not a car is fitted with tires of sufficient size is to have it weighed when fully equipped.

The motorist, by care and attention, can do more to prolong the life of his tires than any repair-man or the manufacturer himself. He should have an accurate pressure-gauge, and test his tires at least once a week, in order to be sure that they are constantly inflated to the pressure recommended by the manufacturer. This pressure varies from sixty to ninety pounds, according to the size of the tire. Proper inflation is of more importance than all the other rules which can be laid down for the care of tires. Proper inflation the motorist must interpret as *high pressure*, that is, compared to the degree of inflation which would cause his car to ride easiest. A tire, when properly inflated, should not flatten at all when the car is loaded. Too many drivers are afraid of bursting their tires by a too zealous use of the pump; so let it here be stated, finally, that no air-pump for the inflation of tires, either hand-operated or mechanical, is capable of exerting a pressure exceeding 125 pounds to the square inch, and this pressure would not be sufficient to burst a tire which was even one-quarter as strong as tires are now made. A perfect tire will not burst at a pressure of seven hundred pounds. The motorist may ask, then, an explanation for the fact that tires sometimes "blow out." It is answered by stating that the tire must have been injured before the blow-out occurred, which is often brought about by a previous puncture or stone-bruise, which weakens the tire at the spot where the blow-out afterwards occurs. The layers of fabric are a tire's whole strength, and are very easily weakened by cutting and by water which is allowed to enter through cuts in the cover of the tire. Water and dirt serve to rot the threads of the fabric, and therefore every precaution should be taken to see that all cuts in the tread or walls of the tire are immediately repaired.

In driving the car much can be done to prolong the life of the tires. Turns should be taken at moderate speed, or the tires will be "rim-cut." The brakes should not be applied so suddenly as to lock the wheels, or part of the thread will be torn off. The clutch should be operated carefully for the same reason. Oil, grease, and gasoline should not be allowed to come in contact with the tires, as they soften and disintegrate the rubber. For this reason oil should not be allowed to drip from the wheel-bearings or chains.

SHOCK ELIMINATORS

By S. F. HEATH

THE rapidly growing interest in shock eliminators only goes to prove the absolute necessity for some efficient device to eliminate the damage, danger, and discomfort of rough roads. One of the best-known writers on automobile subjects states:

"Without question the motor-car is farther astray in the matter of springs than in any other one particular. A moment's consideration will show that no single spring suspension, no matter what its shape, can correctly handle a car at all speeds on rough roads. At over twenty miles the spring of any known form fails to meet the requirements. If flexible enough to give good riding on fair roads at moderate speeds, the springs will close with rough surface and faster pace.

"To meet all requirements the spring effect must automatically make enormous differences in its resistance and recovery effect, and must be helped by a powerful auxiliary, whose services will be called into action by the road-level variation impact in the precise degree demanded by the special instance."

The ideal shock eliminator must meet the following requirements:

1. No restraint of the free, easy spring play on good roads, at any speed, or over moderately rough roads at slow speed.

2. Below and above this normal or good-roads spring action the speed and distance to which the spring goes must be controlled automatically and in just the right proportion required by each individual shock.

3. Practically all the excessive load and strain of rough roads must be assumed by the eliminators, thus leaving the springs to take care of the normal load only.

4. The eliminators must be built on principles which will permit of the use of easy, flexible springs, for it is only when such springs are used that the greatest saving in tires can be made.

5. They must allow an increase of speed over roads as they come, with an increase of comfort and safety.

6. Must not require constant adjusting, refilling, oiling, or other attention. The working parts must be perfectly protected from mud and dust.

7. Must have universal or ball joints to compensate for the body-sway on rough roads.

8. Must prevent the springs from going too far up or down, but stopping them without shock, thus doing away entirely with rubber bumpers and straps.

It goes without argument that a device which meets these requirements must be of so much real benefit in dollars and cents, safety and comfort, that no man owning a car of any power over five horse-power, or capable of a speed above ten miles an hour, can afford to be without it.

Of the devices now on the market the one coming nearest the ideal can be judged by taking into consideration the mediums used for control: Pneumatic or air, of which there is one. Friction and hydraulic, of which there are numerous designs. This medium, therefore, must be elastic in itself, so that under sudden stress it will, even when confined, give way to a certain extent. It must get out of the way entirely when no restraint (as on good roads) is needed. It must be capable of such manipulation as to automatically offer a constantly and instantly variable resistance, according to conditions as they occur.

This medium must be self-renewing without any attention from the car-owner, who, in fact, will forget that his car has these "insurance policies" attached, except when he occasionally admits to himself, after striking an especially hard bump or deep hole, that without them he certainly would have broken springs.

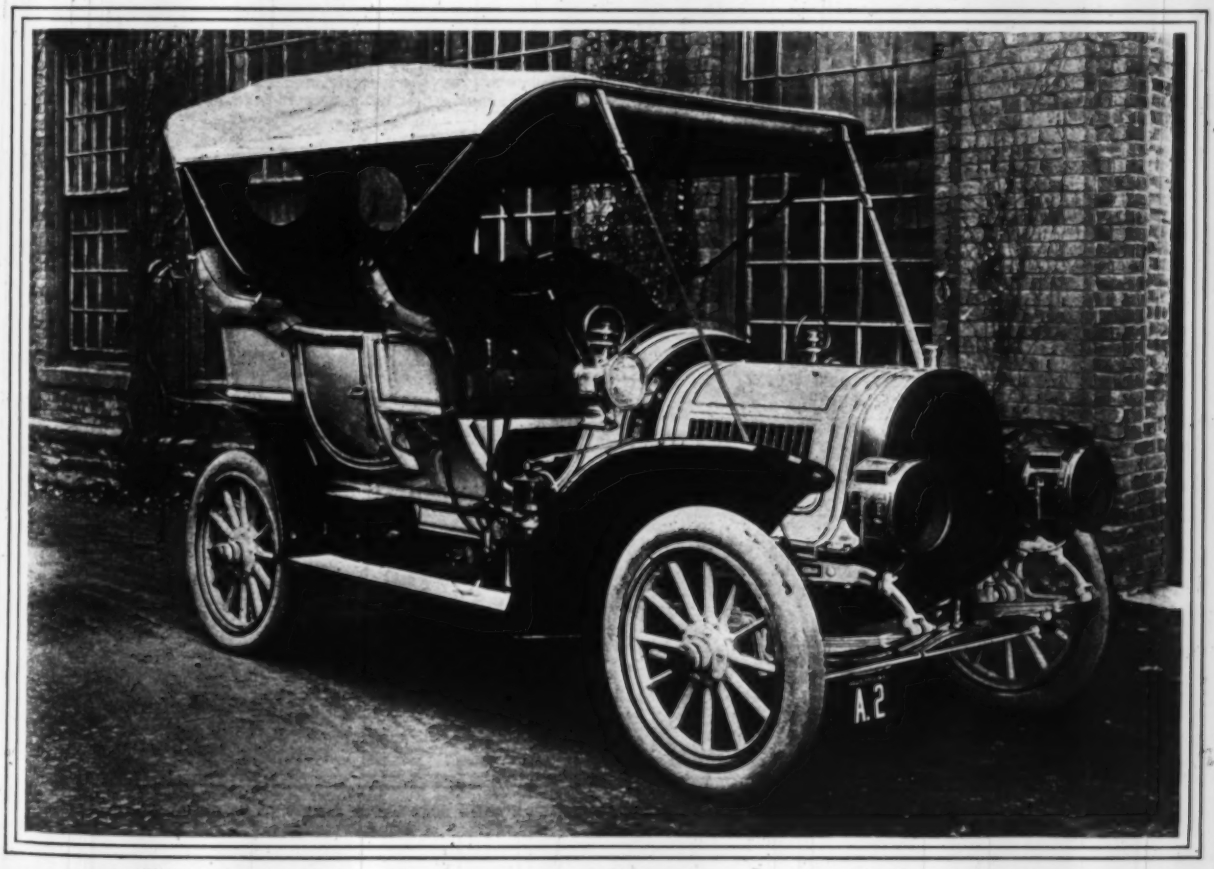
Eliminators constructed with these features will save at least twenty per cent. of tire and brake wear, and this is admitted by those who have had experience and are in a position to know.

Without eliminators nothing like a uniform speed can be maintained. The driver is obliged to apply his brakes very often as the crossings and other bad spots are met with. This means that a very destructive load is thrown on the tires, both in slowing down suddenly and in regaining the speed. The use of a proper shock eliminator, such as described, will save this wear and tear and loss of time.

These statements and others are proven by a series of careful and exhaustive tests recently made by Professor Charles F. Park, of the mechanical engineering department of the Massachusetts Institute of Technology. Among the large number of diagrams taken it is shown to the eye that over a bad stretch of ground there was 25.4 per cent. more average vibrations to the car, at a speed of eleven miles per hour, without the eliminators than was the case when the same car was driven over the same road at a speed of twenty-five miles an hour with the eliminators attached. The passengers were tossed free of the seats at the eleven-miles-per-hour speed, but at the higher speed remained comfortably seated.

The air we breathe is the only elastic medium which can meet the requirements laid down in the construction and action of the ideal shock eliminator.

AN AUTOMOBILE IN WHICH COMFORT AND SECURITY HAVE BEEN THE MAKER'S TWIN AIMS



This Machine has 25 to 30 Horse-power, and represents the latest Development in Touring-car Design

GOOD ROADS AND THE NATION'S PROSPERITY

By COLONEL ALBERT A. POPE

A CURSORY perusal of the reports of railway commissioners, and of the data compiled by the departments of Agriculture and Commerce at Washington, would convince the most sceptical theorist that the agricultural and transportation interests of the United States overshadow in importance the manufacturing and all other interests combined. The question of our success as a nation depends not on what we can make, valuable as this element is, but on what can be raised from the soil and transported to the consumer at a cost that will not be prohibitive. Therefore it follows, logically, that our national prosperity hinges in a large measure upon the condition of the highways throughout the country; for, if crops be abundant, labor plentiful, and money for transportation to be had at reasonable rates, yet if the roads cut off communication from farms to shipping points, the price of the produce becomes abnormally high, and what ought to be a public benefit becomes a national calamity.

Numerous tests, covering widely separated territories and varying conditions of climate and topography, have resulted in securing valuable figures on the traction resistance with wheels equipped with tires of different widths on macadam, clay, and hard-dirt roads, as well as on sandy and muddy ways.

The lines of inquiry in one experiment, including upwards of a thousand counties throughout the States of the Union, showed that the average length of cartage over country roads was slightly more than twelves miles, with an average weight of a little over two thousand pounds per load, and a consequent cost of about twenty-five cents per ton per mile. Although these figures are correct for the territory covered, they would, of course, be modified by complete data covering the entire country; but they are indicative of the general condition and cost to the farmer of transporting his produce.

Here, then, is the meat in the cocoanut, and the general question of supply and demand must take into account this unusual expense of transportation from farm to station. We would not for a moment permit the railways of the country to charge such an exorbitant rate. State legislatures and the Federal government would quickly intervene and prohibit it as a detriment to the people of America; but the grangers and others have for years past acquiesced in a practice that has robbed them of the comforts and, in many instances, the necessities of life.

While the rational handling in a broad fashion of the entire good-roads question would redound to the benefit of all citizens, it seems essential that the farmers should be shown something of the direct profits that must come to them from the extension of good roads.

Several counties in one of the States in the Middle West were thoroughly canvassed under professional supervision, and the data collected from intelligent farmers were carefully tabulated. When there were included such elements as economy in time, in force of transportation, and the reduction of the cost of wear and tear, it was estimated that each section of land with poor roads represented a loss of $2432 per annum—enough to construct several miles of good highways. The increase in valuation of each section of land by the construction and maintenance of proper roads was from the same data estimated at $5760, or about $9 per acre.

Take an extreme supposition to the effect that in direct appreciation the farmer could count on no more than $2 an acre. Is there any granger in the land who would not jump at the chance to meet his share of the tax for good roads, and reap this direct and many other indirect benefits therefrom?

On good roads heavier loads can be drawn, and drawn faster, and the difference between the selling price of produce when carried in a wagon over a smooth road for one hour and the price of the same produce transported over a rough road for three hours is oftentimes the difference between profit and loss.

The benefits to be derived from a perfect system of communication would be felt by all classes of the community. The farmer reaps a better profit by having easy means of transportation from the farm to the distributing centres, and in like manner the inhabitants of large towns and cities are equally benefited by an economy in transporting the product of their labors to the rural districts.

Railway freights have been steadily reduced by the improvement of road-beds and rolling-stock, to which work managers have applied all that science, experience, and invention have developed, and in like manner the expense of wagon transportation will gradually decrease as the condition of our highways is improved.

Roads should be so constructed that they will be passable during all seasons of the year, a condition of affairs that would add an element of stability and regularity to the trade of the country. As matters stand now it often happens that the wet season transforms roads into quagmires, causing produce to accumulate until drier weather permits its being hauled to the nearest station, which thus brings about a congestion of traffic because the railway authorities are unable to meet the extraordinary demand for cars. In this way some of it perishes and part is damaged, and, taken all in all, the value of the whole is materially decreased before it reaches the consumer, though the price to the consumer under such conditions is abnormally high. The farmer should not overlook the point that it is to his great advantage to be able to draw produce to the shipping point at a time when regular farm duties are least absorbing, and to have the advantage also of marketing produce whenever the price is highest.

The automobile has of late years become a most aggressive par-

THE NESHANIC ROAD, IN SOMERSET COUNTY, NEW JERSEY, BEFORE IT HAD BEEN IMPROVED

THE SAME ROAD AFTER TIME AND DOLLARS HAD BEEN JUDICIOUSLY EXPENDED UPON IT

An Example of what "Good Roads" Perseverance can Accomplish

THE MILES AND MILES OF MUD AND RUTS WHICH USED TO LEAD INTO LANSING

THIS IS THE LANSING ROAD AFTER THE "GOOD ROADS" CHAMPIONS HAD BEEN AT WORK

The "before and after" Aspects of a Michigan Road

tisan for good roads, because each user of an electric or gasoline-driven machine has had an ocular and positive demonstration of the value of proper highways. He knows by experience that the car will run better and last longer when the road-bed is firm and the surface even.

When one considers that more than one hundred million dollars are already invested in motor-cars, and that the number of purchasers is being multiplied day by day, it is not difficult to form an idea of the influence automobiles are bound to exert toward the betterment of country roads. It is true that this machine brings in its train new and untried problems, even in the matter of road construction and repair, but it will bring, too, the successful solving of those problems to the great advantage of all users of the highways and to the community at large.

State aid and supervision for the construction and maintenance of good roads has been demonstrated to be a practical way of securing the desired end. Federal appropriations will doubtless come a little later on, when we are to take up the consideration of such communicating highways as link together the State roads and form thoroughfares that facilitate interstate communication. Skilled work is as essential in maintenance as in the matter of first construction, and many of the States have recognized this fact and appointed highway commissioners, under whose supervision the legislative appropriations are expended, and by whom an annual report is submitted.

The cost of radical reforms, especially those whose results will bring greater benefits to our children's children than to us, should be borne, at least in part, by coming generations. This has in some instances been very wisely arranged, and the necessary funds raised by the sale of special bonds, to be retired in a term of years by a sinking-fund. This is no burden to our posterity, but rather a wise and profitable investment.

NEW JERSEY SETS GREAT STORE BY HER ROADWAYS; ONE OF THEM WAS ONCE LIKE THIS

THIS IS ANOTHER VIEW OF THE SAME ROADWAY, TAKEN A FEW MONTHS AFTER IMPROVEMENT

What the State Aid Law did for a Jersey Highway

COACHING COLLEGE RUNNERS FROM A MOTOR-CAR

By J. B. ROWLAND

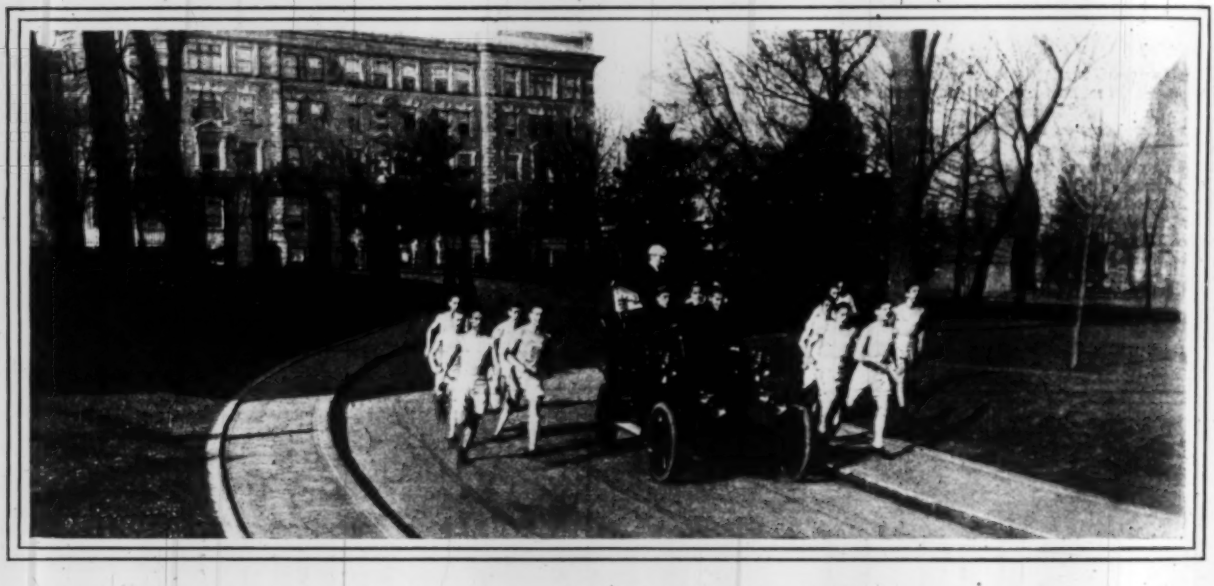
IT is to Courteney, the famous coach of Cornell's racing crews, that credit is usually given for the statement, "My crews are trained to the minute." It is worthy of note that such a statement should be considered of sufficient value to be treasured as a bit of quotable wisdom, for it is undoubtedly the goal to which all trainers strive. Considered as such, however, it is not surprising that its authorship should be accredited to a man who has had such remarkably consistent success in developing a winning brand of brawn.

The training of a crew or team of athletes to compete as a unit is in many respects a far simpler matter than the task of developing numerous individual talents, the joint sum of whose independent efforts must be responsible for the success or failure of the venture. Where team credit is the important point the mistakes of the individual, if not too serious, may be subordinated to the development of the team as a team. The recognition of this principle—the relative importance, or rather unimportance, of individuality as compared with team ability—has of late become so pronounced that individual ability is relentlessly sacrificed in favor of team-work. It is thus that the tendency of football coaching has been to subordinate the so-called "grand-stand play," and to direct the aggressiveness of the individual where it will redound to the credit of the team as a whole rather than to his fame as a single player.

When a coach, however, must develop, not the energy of a squad, but the capabilities of individuals for a contest in which the fault of one cannot be atoned for by the creditable performance of another, he may truly be said to have a task worthy of his best efforts. Such a task is the coaching of the runners of a track team. On the individual success or failure of each runner must depend the prestige of the Alma Mater for success or failure. Unfortunately, the inherent conditions for coaching of this character tend to increase rather than diminish the difficulties of the task. Your runner, encircling a quarter-mile track, is, during the greater portion of the time, too far from the watchful eye of the coach to allow of his detecting the subtle faults of form, whose invidious appearance often means the difference between success and failure when success is most to be desired and failure most regrettable. It is perhaps largely on this account that consistency in the turning out of runners has not been an abiding factor in the athletic history of our college world.

Now, however, comes the athletic coach of Columbia University—Mr. J. B. Crooks, known in the familiar appreciation of the college vocabulary as "Josh" Crooks"—with a scheme whereby he hopes to minimize the difficulties of these coaching conditions.

He has provided himself with a 24 to 28 horse-power motor-car, to the dash of which is attached a speedometer. With this combination he has been laboring quietly, but persistently, during the fall with his cross-country runners in support of one of his fundamental theories that a strong cross-country squad offers the finest foundation for a successful track team. If his track team is as successful during the coming spring as he has every reason to believe it will be, it is safe to predict that the automobile will thereafter play as important a part in the coaching of a track team as does the coach's launch in the coaching of a crew, for it is a somewhat similar part that has been assigned to it. From a position of vantage in the car, Crooks is able at all times to keep in the immediate proximity of the squad, so that he is prepared at any moment to direct such corrections in form or efforts as his trained judgment deems necessary, while by directing the chauffeur to hold the indicating arrow of the speedometer at a designated point he is able to regulate the pace with absolute precision. He has thus, at one throw, overcome the two principal difficulties in the training of runners, the spotting of a fault at the moment of its appearance, and the direction and constant control of the pace.



The Dry-land "Launch" of Columbia's Athletic Coach

Experiments in the method of training have served to show that while driving before the squad as a pace-maker is likely to render the men dependent upon the speed of the car for the pace, a scheme whereby this method is adopted at the start, and a change made during the course of the run so that at the finish the squad is being driven before the car, serves to develop the powers of endurance to their greatest extent. There is also great satisfaction in knowing precisely the capabilities of the various units which compose the squad, and this method supplies the desired information with a completeness that has not been equalled by any other, permitting a more intelligent direction of the light indoor work made necessary by inclement winter weather. Among the minor advantages which the use of the car has developed are the conveniences afforded for the carrying of sponges, restoratives, bandages, and other paraphernalia which may be needed by the runners, to say nothing of the service it is able to render as an ambulance in case of a sprain or other injury.

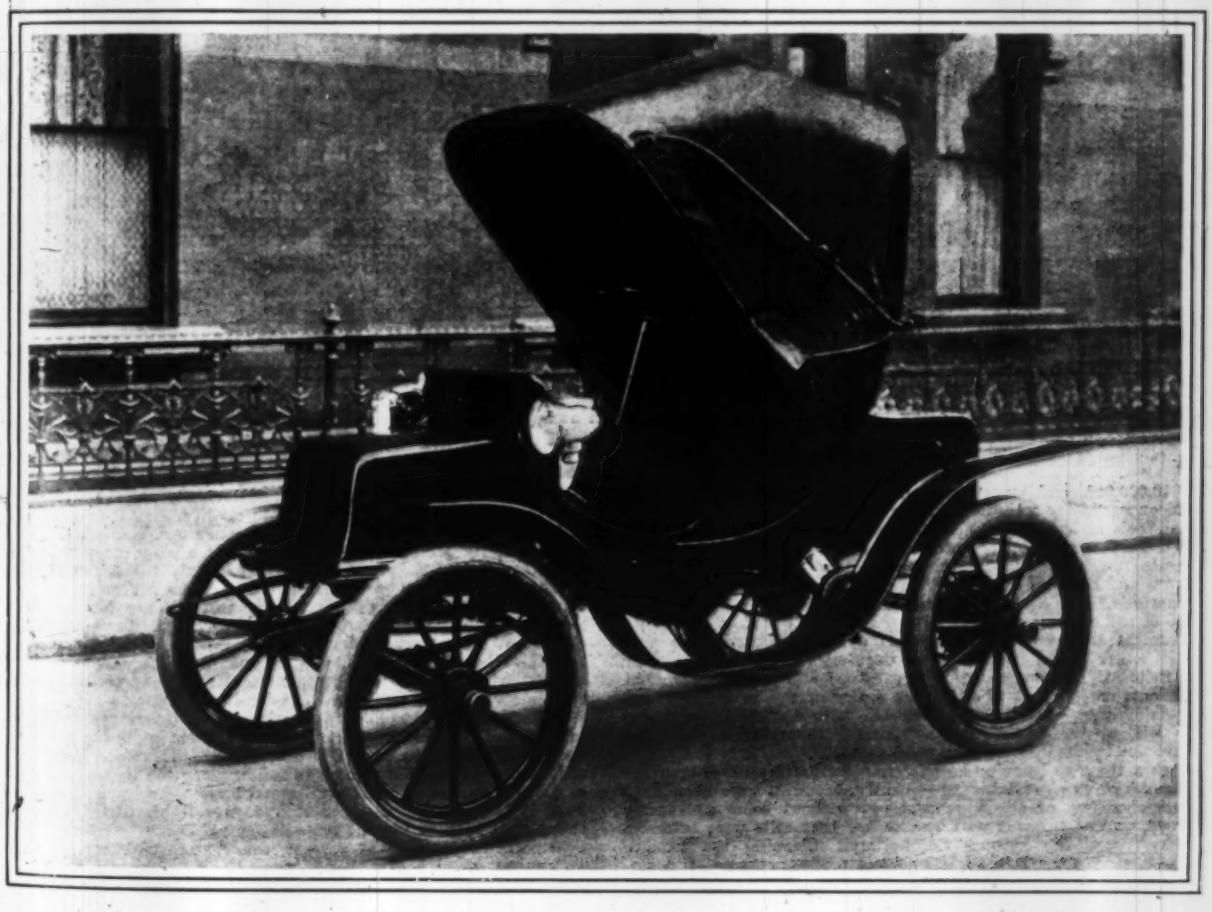
THE ELECTRIC MOTOR OF YESTERDAY AND TO-DAY

By F. A. BABCOCK

WHEN I look back eight or nine years, and think of the first electric cars that were placed on the market, and how far short they fell of doing what was stated they could do by those that had them for sale, it is a wonder, almost, that any one ever could be induced to buy one afterwards. I do not think there ever was another line of goods precipitated on the public that represented so much money-value invested that was so utterly worthless, practically.

It now appears to me that pioneers in the electric line were ignorant of the shortcomings of their product, or they would not have placed on the market such large numbers of them as poor as they were. Of course the main trouble met with was the inability to do the mileage claimed, or anywhere near it. The reasons for not being able to run the number of miles were various. "How much current does it take to run your car?" And the automobile builder (knowing little about storage-batteries and their capacities) put them in his cars, only to learn by sad experience that not half the mileage expected was obtainable. Was it any wonder, then, that they soon became very unpopular?

While the manufacture of storage-batteries had been carried on for twenty years or more previous to 1898, they had been used, principally, for stationary lighting and power work—work that was very steady in its requirements, and where the matter of weight per cell was not such an important factor as it is in an automobile. Is it any wonder, then, that the storage-battery, when put in an automobile, and called upon (as it was) to do entirely different work than it was built for, should fail to do it satisfactorily? And was it strange that the builders of storage-



A modern Electric Victoria—a Type of Motor whose Endurance Run and Speed Capacity have doubled within six Years

batteries were all at sea, so to speak, at the unsatisfactory results?

Batteries were not capable of holding the amount of current necessary, bearings and mechanical parts were poor and required more current than they should. Besides, motors were very inefficient, and drew heavily on the batteries, soon putting them out of business. So that everything conspired to the failure of electrics at that time.

Battery-makers would, without a blush, guarantee that the battery they offered for sale would run the vehicle forty or fifty miles under any and all conditions, not deeming it necessary to ask,

In the past five years, and especially during the last three years, marked improvements that tend to longer life and greater mileage have been made by battery-makers. Added to these, the knowledge that has been gained in *how* to care for batteries in use has increased their value three hundred per cent.

While the storage-battery of to-day is giving good satisfaction, I look for many further improvements with the present lead bat-

tery, and do not think any one need wait until Edison perfects his much-talked-of battery before buying an electric vehicle.

Just think of the great cab companies that were organized in almost every large city (for the transportation of passengers), and for vast sums: one in Chicago for several million dollars, another in New York, Boston, Philadelphia, and even in this city (Buffalo), and real hard money to the extent of millions paid in. And this before their practicability had been even slightly tested.

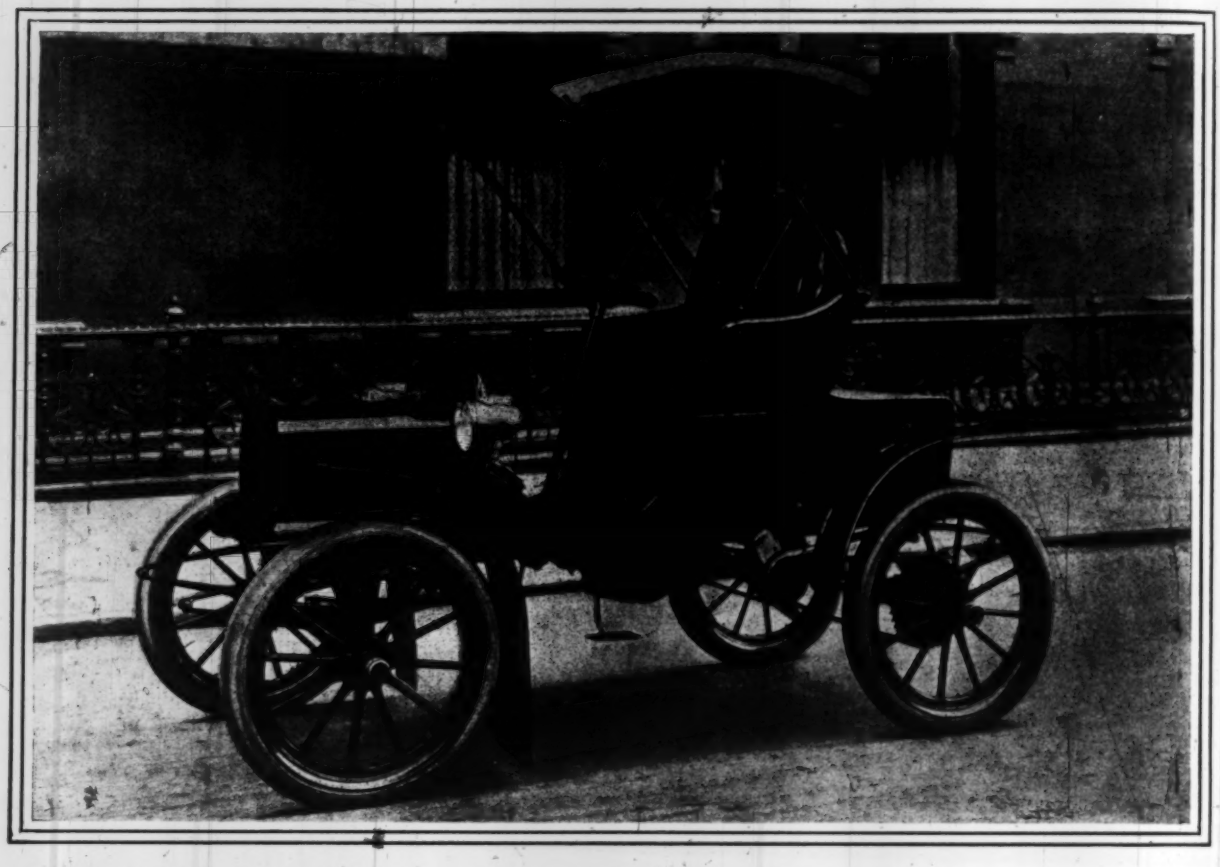
Several electric automobile factories were capitalized as high as $10,000,000, and money paid in before they knew what they could or would try to build. The promoters of some of these were either fools or knaves. Conceive, if you can, what the product of such enterprises would, of necessity, be.

Again, we must consider the lack of knowledge shown by the garages and agencies everywhere as to the care and proper method of charging. The electric was looked upon by the dealer as somewhat of a "side-line," and no proper effort was made to learn its mechanical and electric make-up. If a sale was made, the purchaser either placed his vehicle in the dealer's hands for care, or else installed his own charging apparatus; and without practical experience on the part of either the dealer or the owner, it is not surprising that electrics soon came to have a "black eye," and were held up to the public as a "horrible example" of what one should not buy.

Such a thing as learning how to charge a battery never occurred to the dealer as essential. Consequently, batteries were burned up by overcharging, or else were sent out without being sufficiently charged, and as a result were run so low that cells were reversed, thereby practically ruining the battery. Cleaning the commutator—a simple thing in itself, and one necessary to do on a stationary electric motor—was entirely ignored by the earlier users of the electrics; and then they wondered why they could not get any speed or mileage out of their vehicle. Fortunately, all of these shortcomings, caused by ignorance, have been done away with, and the dealers and users of electrics are learning that while the gas-engine will "holler" (so to speak) if anything goes wrong with it, the electric engine (motor) is unable to make its wants known in that way, but must be looked after regularly.

Is it any wonder that people became disgusted with the electric automobile?

No such conditions ever existed in connection with the gasoline-car. Good, hard-headed business men went into that line cautiously and conservatively, and failures have been few. The initial step taken by dealers in gasoline-cars was to equip the garages so that they could handle them properly, putting in such machinery and equipment as needed, and an efficient corps of machinists in order that they could be intelligently cared for. Manufacturers have learned that while a cheap gasoline-car can be built to serve the purpose for which it is intended, the same does not apply to the electric automobile. The "electric" must be good; nothing else will do. Good motors, good batteries, good controllers, good mechanical construction, good upholstering and painting are necessary or it will fail to perform satisfactory service. To put in cheap *anything* kills it, so to speak, for the user, and the great reason is that the class of people who purchase electric cars are of the best class, and logically are the most critical, for they have been accustomed to quality.



An Electric Runabout of To-day that can make a "Century" Run at an average Speed of fourteen Miles an Hour on one Charge

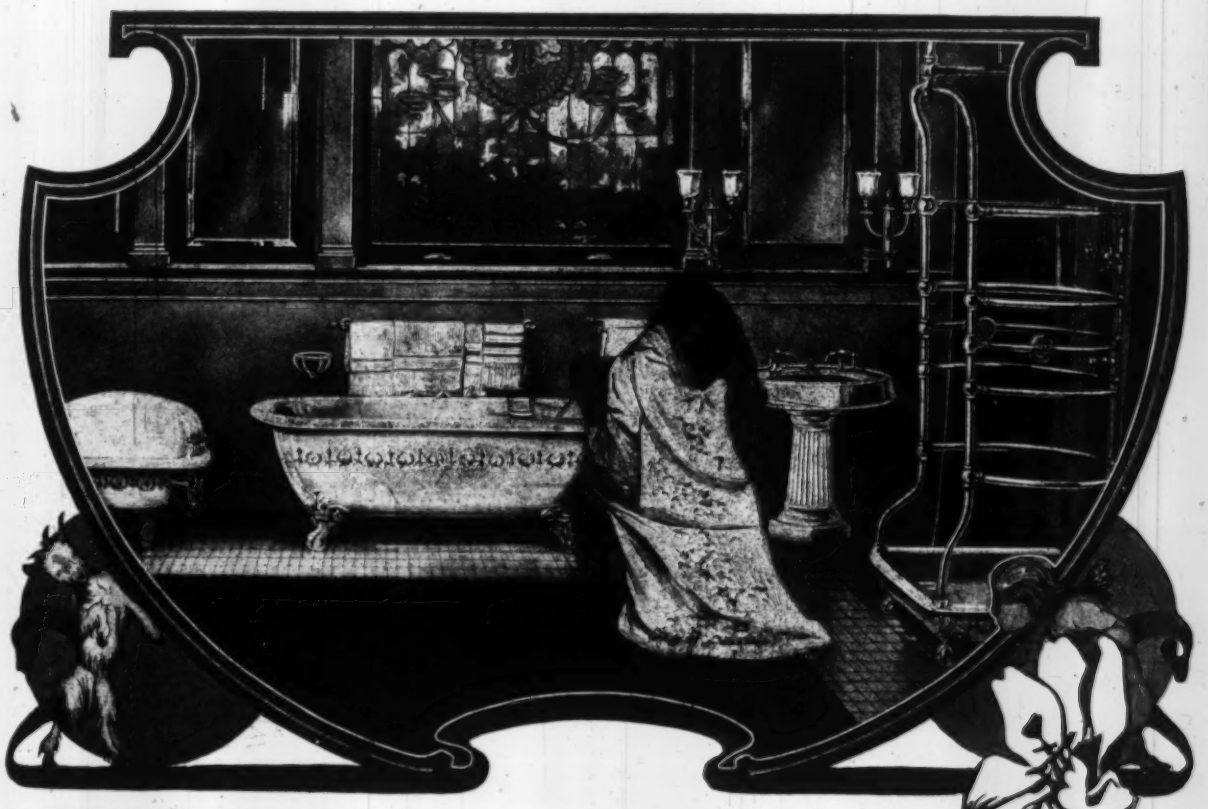
The "electric" is essentially the woman's car, not only because it is so easily controlled and operated, but also on account of its cleanliness. And the same good reasons apply to men as well.

When gasoline-cars were first put on the market in large numbers the first thought of the family was, "What fun we shall have taking long trips in the country." And for that purpose an electric would not serve, but they have learned by experience that seven-eighths of the rides they have time or the disposition to take are less than fifteen miles in distance, and the ever-ready and clean electric is the convenient car for them to use.

The electric automobile is a "horseless" carriage, and will, in my opinion, remain so. It is not a machine, as is the gasoline-car, for there is little or no machinery to it. Therefore, it is wise, and, in my judgment, pleasing, to follow along the lines of the best in horse-drawn vehicles of similar patterns. The brougham, since Lord Brougham first designed it and gave it his name, has been and always will remain the same in general design, whether drawn by a horse or propelled by current from a storage-battery.

Can one conceive of a handsomer or more comfortable—not to say luxurious—vehicle for "milady" than the brougham? Next to it comes the landaulet; then the coupé (inside-driven)—just for two—ideal for calling or going to a dinner-party in, allowing one to dispense with the services of a servant (chauffeur), and giving freedom in that direction that one often longs for; no horse to get cold; no man to get cross, because kept out late, and a dozen other good reasons that present themselves why one should use an electric automobile instead of horses. As a city carriage it has no competitor.

In 1900 the greatest mileage obtained by an electric vehicle from a single charge of a storage-battery was twenty-five miles, under the most favorable conditions. In 1906 a run was made several times from New York to Philadelphia (distance 95½ miles) on a single charge of the battery, and in a regular stock electric car, and with road conditions far from ideal. This shows the progress attained in the past six years.



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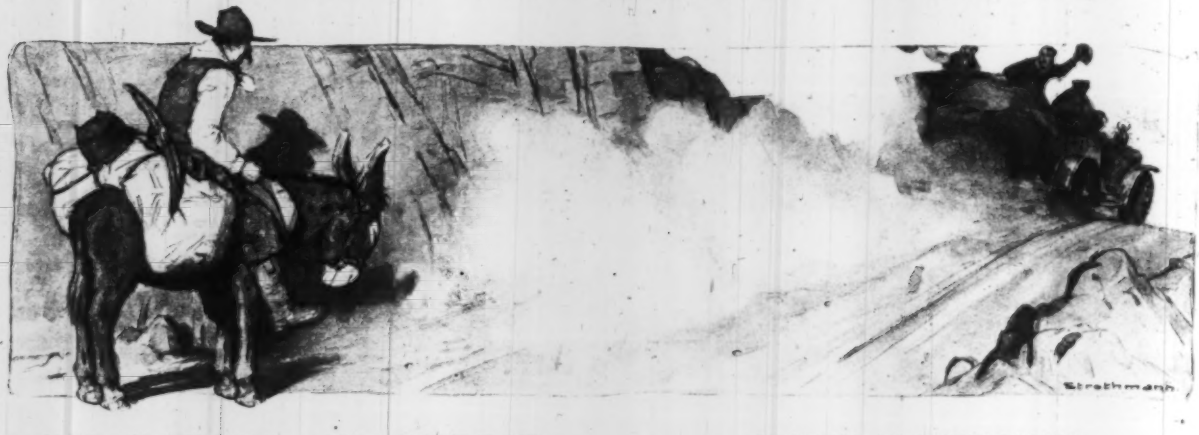
THE GASOLINE CAMEL OF THE AMERICAN DESERT



BY BARTON W. CURRIE

DRAWINGS BY F. STROTHMANN

"I WISH to hire a car for two or three days to take some friends to my Hedgehog claim. It is just across the Amargosa Desert. In some spots the sand is deep, and there is a 4000-foot elevation in twenty miles. Altogether, though, there is only thirty or forty miles of bad going in the hundred. I will need extra tanks of gasoline and water as we cut away from the main route. It would also be wise to carry surplus tires. What's the damage, pal?"

"One thousand dollars."

"Easy. You're on."

The Bullfrog express—a long rangy car, with big wheels and high clearance—had just brought in a little party of four from Goldfield, an even seventy-eight miles from garage to garage of the motor-stage company.

It was a burning day. The indoor thermometers scaled well above 100. Outside, dust that stung like lime-powder wove about in eddies and spiral clouds. The express had boomed down the trail, her Gabriel horn wheezing a nasal salute in a thick smother of alkali. The vermilion body of the car was coated a ghostly white. The faces of the passengers and driver seemed ingrained with chalk; under their goggles the whites of their eyes, cut by the dust, glistened like dull edges of flame. Jumping from the car, one of the party signalled the agent of the automobile station to follow into the Blonde Kid saloon. While sparkling drinks were gulped down thirstily the above brief dialogue took place.

Drawn by F. Strothmann

You experience what the desert can offer in the way of "Thank-you-marms"

The bargain was made as casually as one would hire a hansom on Broadway. Yet this was in a corner of the world where, until a few years ago, the pale stars of heaven have looked down for ages upon neither man nor beast.

Then there had come the intrepid gold-hunters, with their mule-teams and water-bags; some to locate dykes of precious ore outcropping from mountain and desolate valley dip, others to lose their way and, wandering in narrow circles, drop by their exhausted animals and die beside them of the excruciating thirst of the desert that has made scores who were saved babbling madmen.

Now the snorting automobile whirls along these arid wastes in the ceaseless treasure quest. The modern gold-seekers could not wait for railroads, and lost patience with the tedious stage route. So they have installed the Benzine Bus, as southern Nevada calls the big heavy-bodied touring-car. In every camp for hundreds of miles in the lower half of the third largest State in the Union you will hear the clatter and rattle of motors day and night. Should you go up in a balloon after the sun had gone deep to rest behind the California Sierras you would see all over the ocean of desolation beneath flashing eyes of seeming invisible insects moving swiftly in many directions.

Hundreds of cars are employed in this way. They have conquered the barren gold-fields, annihilating distance, overcoming the hardships and tortures men and animals suffered in the earlier discoveries of the untimbered, unwatered treasure mountains. They are not the toys of leisure-loving millionaires down there; the hated juggernauts of over-peopled cities; the pests of the humble, conservative farmer—rather they are the new tools of conquest. Expensive tools, to be sure, but what is expense to the folk who are gripped by the lure of gold and spend lives and fortunes in the hunt with grim ferocity!

Experienced motor drivers on the desert are better paid than many bank presidents in small communities. Gasoline is seventy-five cents a gallon, but water has often been sold to the desperately thirsty prospector for $50 a quart.

Who brought the first automobile into southern Nevada is a vigorously mooted question in the new camps. You will find claimants to this distinction in Tonapah, Goldfield, Bullfrog, Beatty, and Rhyolite. These towns (some of them have almost the population of cities) are strung along, north and south, for more than one hundred miles. Several score cars traverse the new motor trail, that loops them together, with punctual regularity every day.

One of the original settlers of Tonapah told me last fall that a half-dozen cars, as far as he had observed, arrived simultaneously. In his opinion they were brought down to the new bonanza country by a San Francisco salesman, who was speculative enough to take the same chance with them he would with alarm-clocks. He sold them all in a day, and went back for another consignment. Then some one introduced the fad of motoring all the way from the Pacific coast to the desert, and many more machines arrived in this way.

The Benzine Bus has done for the desert what the steamship did for ocean travel. It has concentrated widely scattered mining centres that were formerly vague and distant from one another because of the difficulties, hardships, and perils of travel by stage and burro over the rugged sand wastes, through boulder-clogged ravines, and over platter-flat dry lakes, from which the summer sun seems reflected in shimmering waves of flame and white heat.

What was only a few years ago a day's journey is now only an hour's skim. Yes, and there are hundreds of miles of automobile

speedways. Not of the metropolitan or boulevard sort, of course; and the method of construction has not attracted any road builders to the country, though some of the wilderness thoroughfares are as fine as Roman roads.

For the most part they are made by the simple device of running a few cars over the most likely line of travel along the flats rimmed in by the unclad hills. Once pressed down in even ruts the sand hardens to a granite durability. Generally the line of direction was established between the already well-settled camps by the early stage routes and burro trails. But the motor-car did not use the roads followed by the big wagons and trailers, freight-laden and hauled by teams of twenty and thirty mules. The more primitive vehicles sank deep into the sand, and the shuffling mules sifted drifts of dust to both sides.

For a fast-flying gasoline-driven car such a trail was impossible. Therefore the harder spots and sun-baked mud lakes were selected, making the going sure and facile. The first batch of motors to appear began running between Tonapah, Goldfield, and Manhattan, and threading innumerable prospect trails all about the country circled by these camps. The successful wild-catters have their own cars, with which they flit about with parties their dazzling circulars have attracted from afar. One of these machines has been nicknamed the "Suckers' Steamer," and another "The Good-thing Carryall." These autos have been of immense value in selling "dead holes" and "barren drifts."

It is an impressive proceeding to be whisked away through the stilling silences of the desert in a high-power automobile, luxuriously disposed in leather cushions, smoking a gold-banded perfecto, and giving a ready ear to tales of golden marvels. More than one canny Easterner can look back with pain to a Nevada motoring journey, in which he was spun into a fine web of sham and had his fortune gobbled by a wild-catting spider.

Though the Tonapah and Goldfield Railroad runs one train a day between those two camps, the two dingy, sawed-off cars of the nine-cent-a-mile corporation carry few passengers. Hustling Nevada folk prefer paying $5 for the thirty-three-mile auto express, making the distance in a few minutes more than half an hour, and saving one hour and a half. Now it is possible to travel entirely by automobile from Tonapah to the new camp of Greenwater, making an intermediary run from Goldfield to Bullfrog.

The Bullfrog express from Goldfield makes the journey of almost eighty miles in a little more than three hours, if no tire trouble is encountered. There are water and gasoline stations all along the trail; also tiny road-houses that loom up like hermits' cabins in the waste. The distance from Bullfrog to Greenwater, California, just over the Nevada border, and fringing above the edges of Death Valley, is practically the same as from Goldfield to Bullfrog. The going, however, is far more difficult, as you must cross that grim ridge of purple hills known as Funeral Range.

Until you reach the borax works at Furnace Creek, an eye-delighting little oases on the rim of Death Valley, you do not see a green thing—only sere and gray sage-brush and the crouching Joshua-tree, whose twisted branches resemble a cluster of Medusa's curls. On a moonlight night these stunted growths stand out on the plains like writhing ghosts, and cast long, wriggling shadows across the trail.

There are many stretches of sun-blistered sand-plats, where you will motor for miles without even a glimpse of a Joshua-tree. In occasional sheltered spots you may find grease-wood and chamisal. On either side there will be an endless monotony of stark and naked hillside. In the utter silence the engine of the car becomes a mighty instrument of torture. Always, after a smooth run, sand-drifts roll up like oncoming billows. Then you have experience of what the desert can offer in the way of "Thank-you-marms." Having passed a rough sea of hummocks, limp and breathless, you shoot down grade onto a dry lake, flat and unyielding as asphalt, and not a whit more dusty than the pavement of many cities. Here you may safely go on three speeds and see the wing of your speedometer jerk up to 60. On one of these dry lakes below Goldfield the local motorists are planning an automobile meet for next spring, and hope to draw entries from all the gold-camps for hundreds of miles about.

Rain is mighty scarce, and showers rare down there in the borderland of the Amargosa and Great American deserts, but they are as tremendous in their way as the mountains and wastes. They will wipe a splendidly beaten auto speedway out of existence in a few minutes. These showers come up with great suddenness. A mammoth black cloud will walk right across the sky and chain a black curtain from hill range to hill range. Then the sable canopy will break in great rents, releasing sheer walls of water. Wherever there is a gully or indentation on the mountainside a river will shoot down with tossing waves. Like great mist-shrouded serpents they will go twisting across the flat, gouging out the sand to a depth of from two to four feet, and rolling about rocks and boulders with a dull, rattling noise.

Drawn by F. Strothmann

To be caught in one of these cloudbursts in an auto is vastly uncomfortable

To be caught in one of these cloudbursts in an auto is vastly uncomfortable. You can think of no other shelter than crawling under the car, and there one of the made-in-a-moment rivers is apt to plunge after you, beat you with its water, and fill your lungs with its arsenic mud.

Once the sun comes out again you are quickly dried, or rather scorched dry; for the moisture in the air will give the desert sunblaze a furnace intensity. Probably an hour afterwards another car will come shooting along the trail and stumble into dry ruts and gullies where foaming torrents had been. Incidents of this sort raise havoc with tires. Often in the big camps you will see a lumbering machine clatter up the roadway with both front

Drawn by F. Strothmann

He had seen an entire range of hills peopled with hippogriffs, pterodactyli, and hairy mammoths of gaudy color

tires gone and the metal rims bent all out of circumference. It is far from joyous riding in a crippled motor through that wilderness, be it day or night. By day you have the consuming sunlight, and at night black palls of shadow that blot out all the world except a few blinking stars overhead.

The hills of this ungreened altitude are only beautiful when the rising or declining sun robes them in a purple that has the soft sheen of velvet. More often they are drab or tawny, looking like great calcined mounds; gloomy and terrible in their aspect of external death.

Once, while crawling along in the Bullfrog express, with only one battery sparking feebly and a punctured tire flapping behind (the third that had blown up in twenty-five miles), a strange mirage sprang up before my eyes like a luminous curtain of steam across a distant mountain-top. A huge figure of unearthly and unnatural hideousness was crawling over the rocky shoulder of the hill, seemingly picking its way on a white ribbon of a mule trail that led off to an isolated mine fifty miles beyond. In shape the apparition was like some of the reconstructed monsters of the Mesozoic family. It had many feet, a vast tail that whisked about amid clouds of dust. The head wobbled in an appalling red blotch, glistening with what I fancied were tongues of darting flame.

The terror of the strange mirage had just begun to strike in upon me when it suddenly vanished, and left the mountain again a blighted, forbidding monument of an age when worlds crashed together in volcanic labor. The driver of the car smiled sagely when I told him of the mirage. He said mine was a mild fancy. He had seen an entire range of hills peopled with hippogriffs, pterodactyli, hairy mammoths of gaudy color, and tangled clusters of snakes of prodigious size.

"It's this one-color scheme of hill and desert," he said, "and the glare of the sun. Some passengers, old-time gold hunters, told me that these mirages were actual photographs of chuckawallahs—huge desert lizards you find in the Death Valley region—and other crawling things. It's a trick of the atmosphere, they said, to slide these pictures across the sky from a hundred or more miles away. That may be, but I doubt if they would ever be magnified to such an extent. Other mirages—upside-down pictures of mule teams, automobiles, and the like—I've seen aplenty. Thirst-maddened prospectors perpetually see mirages of springs and water-holes. But none of these, as far as I can learn, are magnified to any great extent. Then, what should the little wriggling things be? Nix. It's either germs in your eye or the heat."

The southern Nevada automobile, however, is not for the poor man. The humble prospector, with a modest grub-stake, can still be seen trekking hill and plain as solitary as the Wandering Jew. His transit equipment is usually a team of mules or a tireless little burro.

A single fare in the Bullfrog express is $25, one dollar for every three miles. At Tonapah you can rent a car by the day for from $100 to $200, according to the capacity of the machine and the nature of the journey. From $50 to $100 extra is demanded when the trip is to be made over little-travelled trails, along which there is no water or gasoline. On the regularly travelled routes there are gasoline stations, and a telegraph wire that may be tapped whenever aid is required. Parties of prospectors often go out prepared for a week's stay in order that careful examinations may be made of remote properties and a deal closed without further tedious bickerings. Quite frequently a mine-operator will tell you how he paid for his new machine in a day, either in a race for a claim or in the sale of a prospect to which he, as agent for the owner, rushed his party across wastes and through mountain passes, beating out other agents who were negotiating the same sale.

Whenever a new hill range or valley dip is revealed as rich in treasure there is furious activity in mining-camps. Cars are overhauled and geared up to their best for an endurance-run of perhaps one or two hundred miles. Accessories of comfort—hoods and other gear not emergently needed—are cast aside as flotsam and jetsam from a ship, whereupon the stripped machines charge out of the Big Diggings like racketing racers getting away from the line at the Vanderbilt Cup Race. Men like Charles M. Schwab, the Comstocks of Milwaukee, Senator Clark, Heinze, and many other millionaires, who are investing heavily in Nevada mining operations, have their agents stationed at various points of vantage on the desert, ready at almost a moment's notice to mount their *benzine steeds* and get in the running for some new field where a big strike has been made. In this way the very best properties are secured under option by the men of great means.

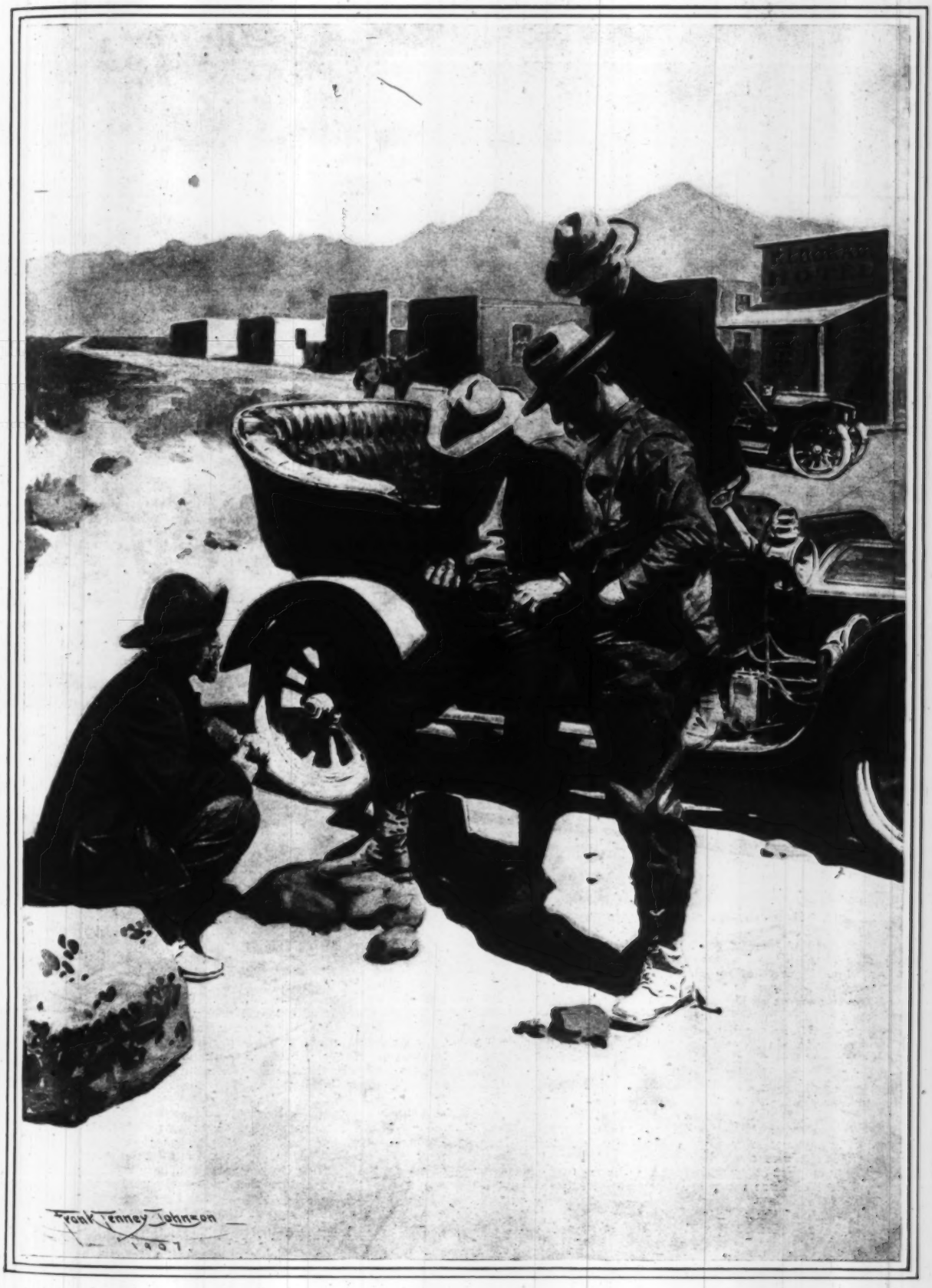
When the Walker Reservation was opened in Nevada last October a veritable phalanx of automobiles stood waiting on the line, their throbbing cylinders hammering in mighty chorus. At the signal of the government agent there was a thrilling dash around the border of Walker Lake, which in some aspects resembled a chariot race, for there were several bad collisions.

There were many really "woolly" features to this race. Tires were punctured with rifle-balls. There was considerable bloodshed. Prospectors on ponies got into the running with the motor-cars, and the mounted gold-hunters were dead-shots when it came to pinking a tire. The small force of Indian police was utterly helpless to preserve order, though they made a few arrests and headed off several crippled automobiles.

There was a great stir in southern Nevada over this Walker Reservation incident, and such a pother was made about the unfair advantage taken by the motoring prospectors that the government declared the opening off and set a later day, when a troop of United States cavalry will go down into the desert to see that there is no claim-jumping, squatting, and unnecessary bloodshed. The charge was made at the time that government engineers had located the richest claims and marked them so that confederates could dash into the reservation in fast automobiles and grab them.

Drawn by Mark Fenderson

THEIR FALLEN FOE



THE GREAT-GRANDSON OF THE PRAIRIE SCHOONER

THE RETURN FROM A PROSPECTING RUN ACROSS THE NEVADA DESERT

DRAWN BY FRANK TENNEY JOHNSON

THE LEGISLATIVE NEEDS OF THE MOTORIST

By DAVE H. MORRIS

Ex-President of the Automobile Club of America

AUTOMOBILE legislation is about as far behind the mechanical progress of the vehicle as a one-cylinder car is behind a high-power racer. Probably no industry in America ever made such rapid strides in so short a time, and yet in New York State alone, where the registration of cars exceeds that of the whole of France, the control of automobiles on the public highway is vested in one awkward, cumbersome statute, framed in the first year these horseless vehicles were used to any appreciable extent. This statute was added to three seasons later, since when the law has not been touched, despite the fact that probably few of the legislators who created it ever saw an automobile, let alone having ridden in one. The statute has practically been allowed to stand a law in two parts with two different interpretations. In the first part speed is left to the judgment and discretion of a reasonable driver; in the second, to the judgment of the police on the miles-per-hour limitations. As a result, automobilists cling to one and the authorities to the other. The magistrates support the police, probably because up to now it has been the popular end of the argument, just as the protest of the automobilists has been the unpopular one. The owner or driver nowadays who thinks he has a good case and attempts to prove it in court has about as much show of a verdict as the stage villain to the favor of the gallery "gods." No matter whether the road be level and straight, travellers few and houses far apart, the driver must not increase his speed beyond the miles per hour allowed, even though his car at thirty miles an hour is under better control than a horse travelling at ten. Let him attempt it, and straightway he fetches up in a police trap.

If you are in a good humor when waiting for the local J. P., ask the constable where he got his interpretation of the law. The chances are it was "orders" from the town board or the village squire. It doesn't bother him much, anyway, where it came from. Down the road in the next township catching "speed vi'lators" of a Sunday or summer holiday yields "the boys" as high as $200 a day, and makes the job of constable the best pay in town politics. "If Constable Smith is reaping a harvest, why shouldn't I?" argues Constable Jones. In the city the bicycle cops and the traffic squad make their arrests under orders from the desk. It is not up to them to reason why! "Exceeding the speed limit" is the charge in either case. Reasonable driving is not taken into consideration, and under the police interpretation of the law there is no escape from paying an exorbitant fine. At the same time a reckless driver can force his way through the crowded streets in the heart of the city, be infinitely more of a menace to traffic, and still be within the law and safe from arrest. We never find the police hunting for speed violations on the narrow pavement down-town. Why? Because under their interpretation of the law there can be no violations here. Upon their theory the most dangerous places are the safest, and the safest the most dangerous. Such is the statute that governs this traffic in the State of New York. The law is crude, unfair, and impracticable. It does not meet the ends for which it was designed, and any law whose real object is not accomplished is a bad law, and will fail utterly through lack of proper support and the respect of the people.

Nevertheless, while the position of automobilists at present is a galling one, the situation is far from hopeless, and we look to the motor-car to win its own way towards reform. The benefits of the industry which it has established—good wages for the workman and good roads for the farmer, uniting of the classes in a popular sport and means of transit—all these things are changing public opinion. The automobile is no longer considered the toy of the rich, but a vehicle of utility and recreation. In price it is coming within reach of those with ordinary means, and already has made itself a necessity in the administration of municipal affairs. If automobiles can forward the cause of good roads, it logically follows that automobiles can influence legislation for a better control of these roads and the administration of justice upon them.

Diligent search of the statute known as the "Highway Law" passed in 1891, amended 1901, will find a passage which reads as follows:

"No person driving or in charge of an automobile or motor-vehicle on any avenue, street, or parkway shall drive the same at any speed greater than is reasonable and proper, having regard to the traffic and use of the highway, or so as to endanger the life or limb of any person."

This act of the Legislature of 1901 was the first law passed in the interest of automobiles, and embodied the old common-law rule given above. Later, on May 3, 1904, the Legislature added to it by passing what is called the "miles-per-hour" clause, providing that in the built-up portions of the town the speed of automobiles should be restricted to ten miles per hour, in those districts not built up to fifteen miles per hour, and outside a city or town to twenty miles an hour. Approaching a descent, curve, turn, or a bridge, and in crossing bridges, a speed of four miles is specified. The common-law clause, above quoted, was left intact, and is just as much a State law to-day as the "miles-per-hour" addition. Yet, to the authorities it might just as well never have been written. The man who drives his car, say, thirty-five miles an hour, on a wide stretch of open country road, "having regard to traffic and safety of life," is, according to that clause, perfectly within his right, and travelling at a speed which is entirely proper. Neither he nor the occupants of his car has any more intention of trespassing than passengers in a Pullman *en route* to a distant destination. They are not abroad to do injury to others, but to use the public highway for travel and recreation, which should be their right. What if they are taking advantage of the smooth, hard road-bed and "making time"? With a high-power car the owner is able to move faster than the farmer's gig. Both are bent on the same intent, however, and making the most of the good going. While the man in the automobile may travel faster, his means of transit are under better control, and less likely to do injury either to people along the road or the occupants of his respective vehicle. To speed in the open country is not harmful. In nine cases out of ten the driver caught in a police trap has not been reckless, nor is he an object of danger. He is arrested simply on the "miles per hour" regulation, and himself and party subjected to discomfort, inconveniences, loss of valuable time, and often to gross indignities. Nothing but such affronts as these to innocent people, and also, no doubt, the enrichment of the constable's pocket, are accomplished by the "miles per hour" regulation in the country, while the common-law clause is openly violated in the crowded streets of the city, where danger really exists, and where no effort is made to check it. We never hear of police traps in down-town New York, nor special bicycle cops or automobile details stationed here to make arrests. How many automobiles turn the corner approaching Brooklyn Bridge at four miles an hour or run between blocks on Broadway at a rate of ten?

"They can't break the law down-town," declare the police (having in mind only the miles-per-hour regulation), in defence. "Traffic is too thick. It's impossible."

Not a word about *the danger!* That isn't considered. The guardians of *the law* hasten to the "avenues, streets, and parkways," where the common-law clause says one may drive at a speed that is "reasonable and proper, having regard to the traffic and use of the highway, or so as to endanger the life or limb of any person." On these "streets, avenues, and parkways" arrests upon arrests follow in rapid succession.

"My car was under perfect control," protests the driver to the magistrate. "I could stop it in less than its length. There was a clear, unobstructed street before me, and not a pedestrian in sight."

"The officer says you exceeded the speed limit," declares the court. "Under the circumstances your argument is of no avail."

Thereupon the driver of the automobile—an intelligent, law-abiding citizen, and an expert in handling his machine—is fined $25, $50, or $100, as the case may be, and if he hasn't the money, is forthwith clapped in a cell.

Is a law which will permit such unjust discrimination a good law? Automobilists and their friends do not believe that it is. They comprise a rapidly growing community of taxpayers, who, by reason of their business standing and integrity, command respect and attention. They demand and they will receive a fair and impartial hearing. They believe that no law contrary to the spirit of the public will stand, and they are petitioning now that the whole subject of automobiling be investigated for a report and recommendation as to corrections. In England a Parliamentary commission appointed by the King has recently recommended that the "miles per hour" regulation, which also exists in the old English common law, be abolished. I, for one, would like to see automobile traffic regulated by a commission which should have sole charge of the licensing and registering of cars, with a court of appeal for owners or drivers whose licenses have been revoked.

As to a substitute for the present law, automobilists ask, in the first place, the abolishment of the "miles per hour" regulation, and the enactment of a new statute, which, while prohibiting reckless and dangerous driving, will encourage the use of judgment and discretion. To protect the public against an abuse of this latter privilege the law could require all chauffeurs to pass rigid examinations before they may drive a car. Such an examination would remove from the highway that undesirable element which has already done so much to place the sport in such jeopardy. The proposed examination, to be effective, should inquire into the moral fitness as well as the mechanical ability of the applicant, and to be as severe, in fact, as the examination

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THE DEVELOPMENT OF THE ELECTRIC AUTOMOBILE

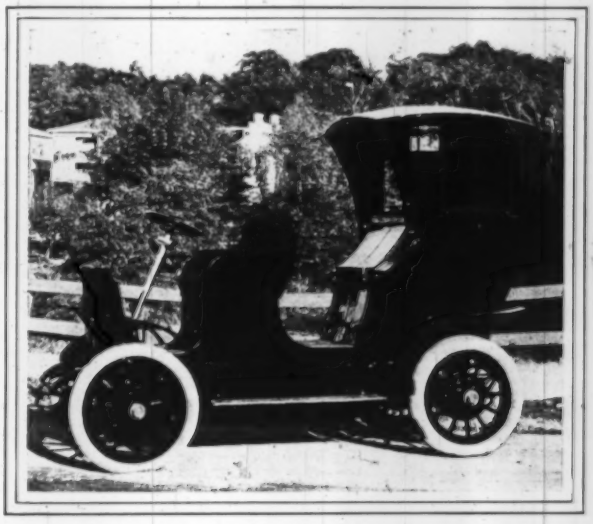
By M. J. BUDLONG

NOTHING more forcibly illustrated the success of inventive genius in transforming forces which exist in nature into practically applied mechanical power than the automobile.

The motor-car must be constructed to withstand a greater variety of shocks and strains than beset any other self-propelled vehicle. The locomotive-engine is self-steering, and runs on an always even roadbed, and the motor-car must be steered by hand over driving surfaces that present all manner of depressions and small obstacles, and the same applies to a comparison of the trolley-car and the automobile; and the engine of a motor-boat has to overcome a constant resistance which makes it a simple affair beside the engine of a motor-car, which one minute has to be pushed to the full amount of its horse-power, and the next minute held back with all the force of its braking system, so that its engine has to meet constantly changing conditions of use.

The question as to the best type of power to be employed in a motor-car has been discussed for many years, and the latest practice recognizes three standard types—gasoline, steam, and electricity. The first, in the opinion of the writer, is the one best adapted to general use, and especially for long-distance driving and touring. The special purpose of this article, however, is to advocate the claims that electricity is the best power for cars to be employed in a certain limited but well-defined and important field of use.

Some aptitude for mechanical works is pretty necessary on the part of the driver of a gasoline or steam car. It is true that a great many men who are far from expert in the use of tools, and very far, indeed, from a complete understanding of the construction of their cars, operate them with a high degree of success; but in order that the driver may expect a minimum amount of trouble, he must have some facility at simple mechanical operations, and this virtually restrains a great many would-be motorists from purchasing cars. It is this class who find their wants and needs so fully met by the electric car as to give it a very important place in the automobile field. The electric is thus the only practical car for a large class of pleasure drivers, for the requirements of a great many physicians, for ordinary town runabout work, for various businesses, for private carriage service in cities, and, indeed, for every purpose where it is undesirable that the driver give steady attention to power generation and the working of a considerable number of mechanical parts.



A Modern Electric Hansom

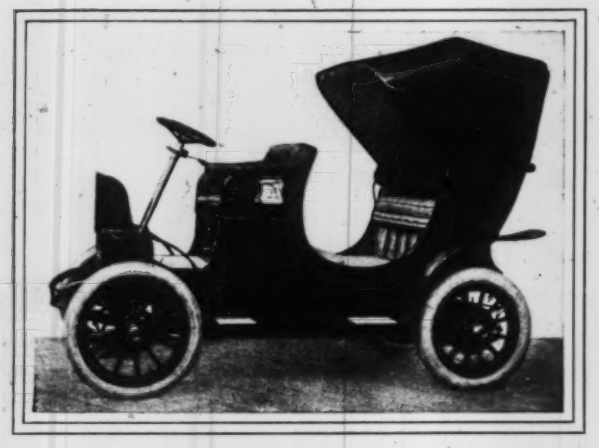
An Electric Runabout which has run 60,000 Miles

The field of the electric car has been greatly enlarged in recent years by continued improvement in batteries, by the development of public garages, and by the increasing availability of private charging-plants.

When we consider what the electric car really is and what it does, we must admit that it perhaps affords even more remarkable proof than the gasoline-car of the resources of modern invention. Through the successive agencies of fire, boiler, engine, dynamo, and storage-battery, potential energy derived from the heat of the sun and stored in coal is converted into motive force, and its application to the driving-wheels of a vehicle reduced to extreme simplicity. By the manipulation of a single lever the operator has this power under full control, but with the transmutation of forces involved he has had nothing to do, because experts in various fields of activity have attended to everything. The power is in the battery ready for use, and it is only necessary to renew the supply from time to time as occasion may require. We have in the up-to-date electric car a machine that seems very nearly perfect in its working, and so simple that any intelligent child can be trusted to operate it safely.

Back in 1896 one of the pioneer American concerns in motor-car manufacturing gave out that after several years' experimenting it had passed the gasoline stage and settled upon the electric storage-battery as the best means of motor-car propulsion. For a time thereafter this concern manufactured electric cars only, but soon found it desirable to add gasoline models to its product, and it has since manufactured both types with great success. The history of the company, and of other makers in the electric field, has shown that the rapidly increasing popularity of the electric carriage during the past three or four years has been due to the growing recognition of its desirability as a substitute for horse-drawn vehicles in

The Development of the Electric Opera-bus



What the Electric Victoria offers in Comfort

the lines of usefulness indicated in a preceding paragraph. The gasoline-car occupies a field not filled by previously existing modes of conveyance, and, if it is to be compared at all with earlier modes, should be considered in its relation to long and short distance rapid-transit system, rather than with reference to its bearing upon the use of horses.

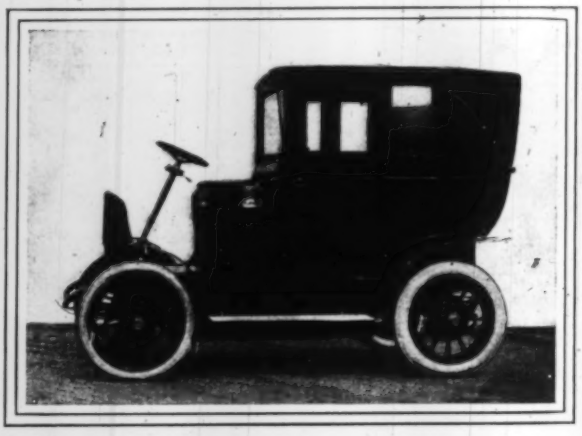
The storage-battery is entirely independent of the electric car proper. It can be removed or replaced as easily as a horse can be hitched to a wagon and unhitched. The parts of a well-built electric car are few and simple, and of great durability. Electric carriages are giving good service to-day which have been running constantly for ten years. Of course the batteries have been renewed when necessary.

A great many people seem to have the idea that the storage-battery is a very frail and unreliable piece of apparatus, subject to ills and whims which make it unworthy of confidence. This opinion has been furthered by various space-writers in newspapers, who have periodically published sensational articles predicting the early coming of wonderfully improved batteries, destined to revolutionize the motor-car industry.

These predictions have at times unquestionably adversely affected the sales of electric cars. As a matter of fact, the leading manufacturers have been constantly on the lookout for battery improvements and adopted them as fast as anything real and tangible in the way of bettering previous constructions has been developed. The light-weight lead battery now in vogue is thoroughly reliable and efficient. There is nothing mysterious in its make-up or in its operation, and if a few simple instructions are followed it will give perfect results within its radius of action. Those who have had the most experience with batteries know that in practically every case where trouble occurs it is solely due to carelessness or unskilful handling. If a steam-boiler is allowed to get out of water, and the tubes burn out, no one thinks of blaming the boiler. If a gasoline-car is run without lubrication and ruins its bearings or cuts its cylinders, the operator and not the engine is held responsible for the trouble; and yet, if the charge in a storage-battery is allowed to run out, to the detriment of its plates, wholesale condemnation of storage-batteries sometimes follows, without any thought as to the actual cause of the failure. Storage-batteries for motor-cars, as now manufactured, are capable of withstanding hundreds of discharges before renewal of any parts are necessary, and cars have been run upwards of 8000 miles before any repairs to their batteries were called for.

One of the most important recent improvements in connection with motor-car use pertains to the charging of the batteries, which has been reduced to such extreme simplicity that no technical knowledge whatever is necessary on the part of the person who conducts the operation. Wherever there is electric current to be had, whether alternating or direct, a simple device can be installed in the room where the car is kept, which automatically takes care of the charging, the operation calling only for the insertion of the charging-plug. Formerly charging was more difficult, as only a direct-current circuit could be employed, and the charging had to be stopped by hand when a sufficient load had been given the battery. This new apparatus stops the charging automatically at the proper time, and also, when necessary, transforms alternating current into direct current before it is fed to the battery.

The great possibilities of electricity as a motive power for vehicles are perhaps most advantageously shown by the unqualified success which has attended the use of electric carriages of the coach type. Electric broughams, landaulets, and hansoms have demanded and won from an ultradiscriminating class of users a standing and recognition accorded to no other form of vehicle. These carriages take the place, for town use, of an ordinary carriage with three changes of horses, and cost less to maintain. They are always ready when wanted, are always under perfect control when in motion, and when standing require no attention. The average speed is much higher than that of the horse-drawn coach, greatly extending the convenient radius of business shopping, or calling tours. They occupy only one-half the space of the horse-carriage, and therefore are one-half less liable to become entangled or delayed on crowded thoroughfares. They are adapted to comfortable use in all kinds of weather and on all kinds of street surfaces. They do away with all the uncertainty and inconvenience incident



An Electric Landaulet

to the use of horses. These advantages have become so thoroughly understood and appreciated that many owners of fine horses keep their electric carriages for use in the evening and on days when extreme cold, storms, or icy pavements make it undesirable to expose valuable horses; and others have entirely abandoned the use of horses for town service, reserving them for their country places. There are no more sumptuous or elegant vehicles in the world than these electric coaches of the best grades, which are intended for private service only, and are built from plans and specifications representing the expressed desires of purchasers who demand and have the best of everything. They are always clean, odorless, noiseless, and free from vibration; their body lines are based on considerations of both art and utility, and their furnishings and appointments are of the most elegant description. There are electric lights outside and inside, electric annunciators, electric cigar-lighters, and, when desired, electric fans and foot-warmers—in fact, the electric current is utilized in every possible way to promote the convenience and comfort of the occupants. The various mechanical features used in the application of the motive power represent the results of years of experimenting by leading electrical and mechanical engineers. The controller is so arranged as to give several speeds ranging from four to eighteen miles per hour. There are safety cut-out switches, and effective braking arrangements which insure perfect control by the driver at all times. The use of these substantial, serviceable, and luxurious vehicles is rapidly increasing in cities, and their production has become one of the most important features of the motor-car industry.

Some of the lighter electric carriages, seating two people, are also in their way marvels of design and construction. They are "smart," fast, and of very high efficiency, the best of them being able to run seventy-five miles under favorable conditions on one battery charge. Those of the victoria type are the most popular. By reason of their refined appearance, comfort, elegance, and simplicity of operation they are admirably adapted to ladies' own use.

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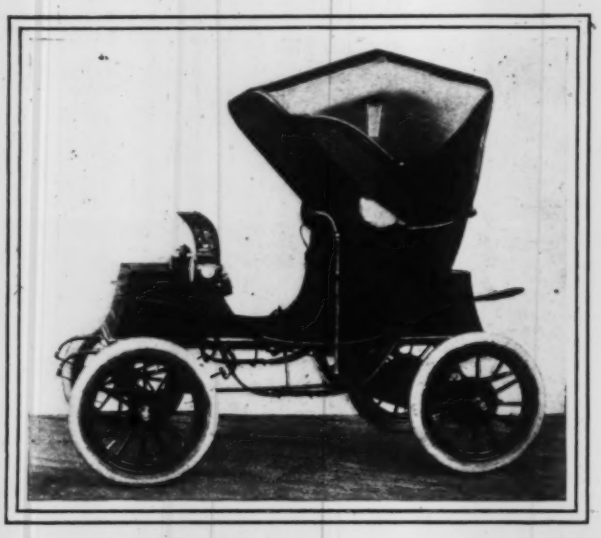

The Electric Phaeton of To-day

THE HORSE OF THE FUTURE AND THE FUTURE OF THE HORSE

By WINTHROP E. SCARRITT

WHEN the Roman eagles' wings were longest and strongest they never flew so far as from Boston Bay to Alaska. Such, however, has been the progress in the transportation facilities during the last century that Boston and Alaska are nearer together in time than were Rome and Jerusalem in the days of the Cæsars.

At the annual banquet of the Automobile Club of America, a year ago, among its honored guests was that great man to whom the civilization of all coming ages will remain a debtor, Alexander Graham Bell. After we had discussed the telephone he turned to my hobby, the automobile, and expressed his keen interest therein. Concerning the automobile I made a declaration which I think rather startled him, but to which he cordially gave assent after a little reflection. The declaration was this, that until the coming of the automobile the human race had made absolutely no progress in the transportation of the *individual unit of society* since the dawn of history. It is true by his genius man had succeeded in capturing the very gods of the ancients and had harnessed them to his big chariots, but the ocean greyhound and the limited express train transport masses of freight and masses or numbers of individuals. But so far as transporting the individual unit is concerned, until the coming of the motor-car man had no other or different means of transportation than did the ancients when the human race was first cradled on the banks of the Euphrates. When Homer sang and the Greeks fought on the banks of the Ægean Sea, their horses and their chariots were just as fine and efficient as any we see to-day on the Champs des Elysées or Fifth Avenue.

In the last analysis the automobile means that man has finally segregated a little part of the giant forces of nature and hitched it to his individual chariot. What human mind can measure the meaning of this mighty fact! Looked at from this view-point the automobile passes out of the realm of the fad and the toy, takes on new dignity and appears upon the stage of twentieth century activities as one of the great economic forces to be dealt with seriously and which is to play a mighty part in the work of the world and in the advancement of civilization.

Doubtless a vague and indistinct idea of the horseless carriage has been in the mind of all civilized people. On one old Egyptian monument was found a rough carving of a vehicle which had for its motive power a repellent jet of steam. A few centuries later one of the Roman emperors had constructed a vehicle the propelling mechanism of which consisted of a system of springs and wheels. Slaves ran along by its side and wound up these springs from time to time. Sir Isaac Newton planned an automobile, but I do not think it was ever constructed. That great mystic teacher, Swedenborg, wrote to his brother on one occasion that he was planning a harp that could be played with keys, a boat that could travel under water and destroy the enemy's ships, and a vehicle that would run without horses at twenty miles per hour. More than a hundred years ago a French army officer by the name of Cugnot built a self-propelled vehicle which was used for a gun-carriage. It ran away and smashed itself against a stone wall. Later he built another, portions of which are still to be seen in a museum in Paris. In 1830 some Englishmen built steam-propelled omnibuses, and they ran thousands of miles, carrying passengers for pay. The rather suggestive name of one was "Autopsy."

Gottlieb Daimler, a German engineer, is called the father of the modern automobile. He devised and built the first successful motor. This motor was taken up by the French firm of Panhard & Levassor, whose products have since become known all over the world. Daimler's first engine was built only twenty years ago. Nowhere else in history has there been witnessed the development of a new industry so rapidly and to such an enormous extent. What of its future? Before proceeding to this discussion it might be well to consider some of the problems involved in the production of a successful automobile. The locomotive is the product of the concentrated effort of many of the world's best engineers during the past seventy years, and it is yet far from being a perfect piece of mechanism. The problems involved in constructing a successful locomotive are always less than those involved in constructing a successful motor-car. It makes but little difference whether a locomotive is a few pounds heavier or lighter; it is built to run upon parallel steel rails, the curves and grades it has to negotiate are at the minimum. It is known in advance of its construction about what the conditions are under which it will be called to operate and about the load it will have to draw. On the other hand, the engineer who builds an automobile must strive to save every pound of weight possible. His materials, therefore, must be the very best known to engineering practices. Instead of running upon a solid road-bed upon which are laid steel rails, the motor-car must be so constructed that it can negotiate our vile American roads. It must be built to plough through sand and mud, over ruts and stones, subjected to all sorts of twists and strains, one or more wheels oftentimes passing over an obstruction ten or twelve inches in height. The car must be able to negotiate enormous grades, make sharp turns—in fact, do almost everything that a horse can do. Thus many and diverse engineering problems are involved. First, there is the framework—what material should be used? how should it be constructed so that, with load and machinery, it will be strong enough to carry the necessary weight and stand the terrible shocks and strains to which it will be subjected? Next come the designing and building of the engine. It must be powerful enough to drive the car and its load up steep hills, and at the same time it must admit of being throttled down so that it will barely creep over level roads or through crowded street traffic. Again, the science of electricity is involved, including coils, batteries, sparking-plugs, insulation, etc. Then comes the problem of transmitting the power from the engine to the vehicle itself, and last, but not least, comes the question of tires, that *bête noire* of all automobilists. Considering the infancy of this industry and the varied and intricate problems involved, it is surprising that the automobile has reached its present stage of practicability. Five years ago it was a very common occurrence to see the driver of an automobile with his car by the roadside and he himself prone upon the ground underneath it endeavoring to ascertain why it would not go or trying to make the necessary repairs. Although the number of automobiles in use has increased enormously, yet it is only occasionally that one sees a car laid up beside the road for repairs.

In this discussion I am assuming that the horse of the future is to be a motor-car. One of the characteristics of the American people is their restlessness. They are never satisfied to stand still, they want to be on the go constantly. The old-fashioned stage-coach had its day, and its skeleton, unprotected from the weather, stands bleaching in suburban barn-yards. Later on the bicycle enabled the individual to travel farther by means of muscular energy than had hitherto been accomplished by any other device using muscular power the world had seen up to that time. Now comes the modern motor-car, the latest and best gift of all the mechanical gods to mortals. Up to the present time the chief use of the motor-car has been as a means of travel from place to place.

A traveller who had done Europe in the conventional way, by train, boat, and diligence, again and again, until, to use his own words, "he was sick of the whole business," last summer was induced to rent a car in Paris and make the trip through France and Switzerland. He started out with expectations of being bored; he ended the journey with the declaration that it was the most enjoyable experience he had ever had. From that time forth this man became an ardent and enthusiastic automobilist. This summer he is planning, with his family, a longer trip on the Continent.

This experience is a typical one. In a public address I heard that fine sportsman and able city executive, Mayor Weaver, of Philadelphia, state that since using the automobile he had learned more about the country within a radius of fifty miles of the city than he had ever before known. One of the pioneers in this new and delightful mode of recreation is that distinguished citizen, Judge James B. Dill, of New Jersey. Judge Dill was first to pierce the Maine woods with a motor-car; since then others have followed his example. The coming season will witness many touring parties starting East, West, North, and South. With genial companions the motor-car offers an ideal way in which to spend a summer vacation. Five years ago there was in this country one automobile to every 1,500,000, two years ago there was one to every 65,000, to-day there is one motor vehicle to every 800 inhabitants. But great as has been the demand for motor-cars for travel, for business and pleasure, the development of this great industry is to come along the lines of the commercial vehicle. This is a field that has been scarcely touched. One uses his pleasure car when the weather is fine or he feels the need of fresh air and the mood to be going seizes him, but "the butcher, the baker, and candlestick-maker" must come to our door every day, rain or shine. The best brains in the business are trying to devise a practical car at low cost that will do just this thing. In the line of motor-cars, up to the present hour, there are handicaps which have greatly restricted its use. In the first place, the initial cost has been too great for the general public. It is only the exceptional individual that can afford to pay from $1000 upwards for a car carrying four people; but when the car is once acquired, like the man that got married, the owner is at the end of his troubles—the beginning end. The repair bills are the things

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THE SELFISHNESS OF CITY SPEEDING

By RICHARD SYLVESTER

Major and Superintendent of Police, Washington, D. C.

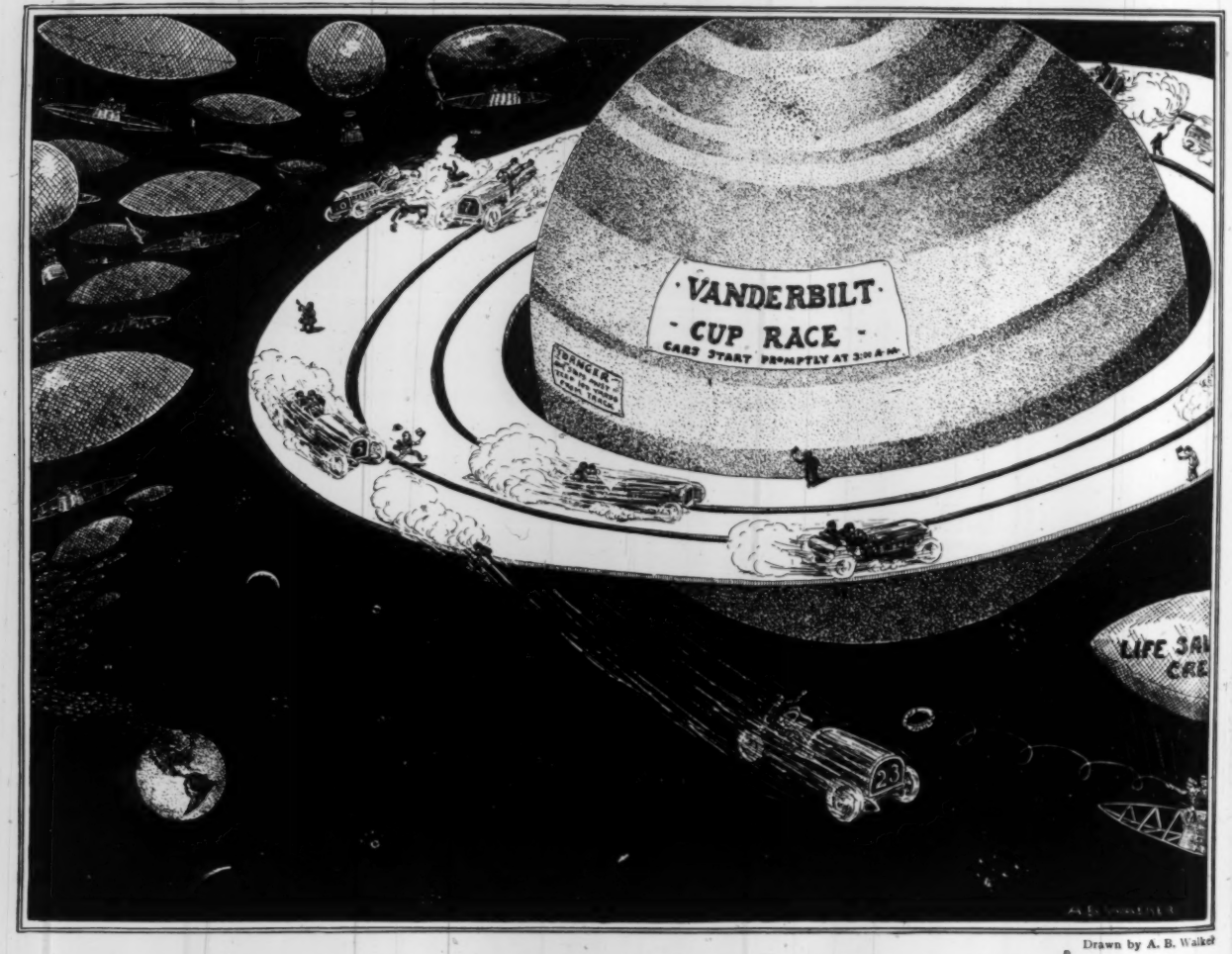
THE running of motor-vehicles in cities and across country has been attended by a great deal of adverse criticism on the part of pedestrians, drivers of horses, and farmers. This condition is largely the outgrowth of a growing familiarity in the handling of machines by operators, and a corresponding want of familiarity with these vehicles on the part of those who have never had occasion to use or manipulate them. It is a fact that the former have become educated on the subject far beyond the understanding had on the part of the laymen. Aside from regarding the motor-vehicles as locomotives off the track, the non-users do not investigate beyond learning how to keep out of the way. Viewing an approaching machine instils a nervousness and fright, they not realizing that it can be brought to a dead stop almost in an instant, if in good running order, and that it can likewise be turned aside from an obstruction or an individual. Laboring under fear, as people do, they have not at all times that command which enables them to avoid contact, and scare causes resentment and adverse criticism. There are many cases where hired operators or chauffeurs have no regard for the feelings of pedestrians or drivers, and to this class most of the blame for any censure on the part of the people may be attributed. An owner is generally cautious in running the motor-vehicle, although there are those who go out for a speed, not caring for financial penalties. Some members of automobile clubs early forget their promises to aid and encourage lawful running, and do not cooperate with the authorities as they agreed. The conductors of motor-vehicles should remember, however, the advantages they have in knowing the machine, its capacities and failings, and should not cause pain and nerve-wrecking at crossings and corners by attempting to exploit their abilities in cutting figure eights around vehicles drawn by horses.

At the capital of the United States, which is included in the District of Columbia, are the best paved streets in the country, and the outlying roads are improved. These are inviting to speed, and to keep it down sixty members of the police force on bicycles, to which are attached speedometers, do an effective service in bringing about a compliance with the laws. The speedometers are tested every ninety days as to their accuracy, and their readings are accepted as never-failing evidence by the courts. Twelve miles an hour in the business section of the municipality is permitted as the speed rate, and no great feeling would exist against it if the operators would give special regard and always reduce to the requirements at corners and crossings.

On the suggestion of the Major and Superintendent of Police of the District of Columbia it is proposed to prominently warn drivers of all kinds at corners, intersections, and all leading places by highly colored signs as to the rules governing the road: "Keep to the Right"; "Keep to the Left"; "Go Slow"—will soon be posted throughout the District. The whole matter is one of education. The motor-vehicle has come to stay and the people will be with us always, so that friction will continue unless sacrifices are made on both sides. The laws should be enforced, but justly, and it is within the province of the motor-vehicle owners to bring about a solution of the question by considering the feelings of those who patronize the streets and roadways aside from themselves. It is regard for pleasure as well as safety of others that counts for much.

Those who conduct machines for hire, and many others, are indifferent to the appearance of their vehicles. They are careless about lights. How often we see an automobile covered all over with mud, the pasteboard sign broken, and obliterated license numbers in evidence! Dim-burning lamps, perhaps for the sake of economy, maybe because the operator is a hired employee, are largely to be met with. The more attractive the machine as to cleanliness, as to lights, and as to numbers, the better the impression created on the public. Those who ride to skylark, visit roadhouses, and do not care, are not rare in connection with the operating of automobiles, and often the chauffeur is ordered to make rapid speed. They are dangerous. Not infrequently does a chauffeur take the owner's machine out for his own frolic, or to hire for the frolic of others. He cares not for results and is an undesirable agent for the owner who pays him, for the man who may hire him, and for the community at large.

It is all largely selfishness and disregard for the rights of others, that makes all the trouble. One indifferent individual may give many careful people a bad name.



Drawn by A. B. Walker

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Sole Importers, New York

MERRIWEATHER'S MUSICAL MOTOR

BY ROBERT EMMET MacALARNEY

DRAWINGS BY DAN SAYRE GROESBECK

EVERY one knows about the Merriweather musical motor now, but then—a short twelvemonth ago—things were different. Sitting on the veranda of any country house of a fine afternoon, one may gamble safely that two out of every dozen of the autos scooting by boasts a Merriweather chassis.

Why shouldn't a careful driver carry solace for the inevitable time when, prone upon the macadam—or, worse, in the smudgy mud of a country road—he must tinker with his gear while the gentle dew of lubricating oil and gasoline does its best to keep him cool? This is what made the musical motor go like hot cakes, once it was put upon the market in perfected form. But perfecting it—that was where we stuck for a time, Billy Britton and I. He put in two-thirds of the capital, and I contributed the other third, plus a bit of practicality. The inventor got a thousand-dollar bonus and royalties: he's getting the latter yet.

He was an odd sort of chap, the inventor, all whiskers and spectacles. Where Billy first picked him up I have never known. But they burst into my office one day when clients were scarcer than usual, even for an attorney who had been only five years out of Columbia Law School.

"Larry," said Billy, as explosively as if he were eighty horsepower and taking a hill in a cup event, "here's a man with a million-dollar idea in his attic and thirty cents to push it along. Evict that grinning brat of an office-boy, nail your shingled door shut, and let's talk it over. Once this thing gets going, corporation cases will look like poor and dishonest graft."

Well, the "professor" talked to some purpose. It seemed that he'd been inventor of several devices for piano-playing machines, but that his share of the proceeds had been lost in the shuffle.

"Of course, it's easy enough to lash a music-box to your car and turn the tinkle on or off as you may happen to want it," he remarked, by way of beginning. "You can take a real grand piano along, for that matter, if you make your tonneau big enough. But this is different. I've found out how to hang a whole orchestra effect without interfering with the balance of the sulkiest touring-car that ever was born. And you get a change of air"—Billy laughed loudly at the "professor's" merry quip—"whenever you change gears. It's durable, compact, dust and rain proof, and can be filled with fresh tunes in five minutes."

"All to the good, eh, Larry?" grinned Billy.

"Who's going to buy any such fool machine but the innocent new-rich and a few Broadway press-agents?" I asked.

"That's just it," said Billy, nodding energetically. "Who do you fancy buys two cars every year, and keep a garage jamful but the new-rich? That's the market we're bidding for. We aren't going to enter the Merriweather musical motor—that's the professor's name, and I've promised him that it goes—in any endurance tests. We're going to make a hit with the suburbs of New York, Pennsylvania, and Ohio, where the mill-hands make more money than a college president."

We compromised on one car, the "professor," as I have said, getting his bonus and superintending its construction. Funny thing, he knew nothing at all about driving, although he did know the component parts of an auto up, down, and across. So, in three months, the first Merriweather musical motor was finished. I looked it over in the factory. It surely was a pretty machine, with good lines. The "professor" patted the frame lovingly.

"She's got a double system of ignition," he remarked; "battery and coil and magneto, and there are two sets of brakes."

"She looks good to me," I said. "Is the music-tank filled?"

"Six assorted airs," replied the professor.

"I'll try her out instanter," said I.

"The paint's too soft," interposed the foreman, who had been eying both of us with growing suspicion. "I wouldn't advise you to take her out before to-morrow, sir."

"H'm! that's awkward," I mused.

It really was. You see, Billy Britton was to be married to Leslie Barstow on the morrow. He hadn't counted upon his wedding interfering with the development of the Merriweather musical motor, but the Barstows, all, to be sure, save Leslie, were going abroad earlier than they had expected, because Mrs. Barstow's physician had recommended a trip up the Nile. Whereupon Billy and Leslie had decided to be married in May instead of in June.

We had a church rehearsal that evening, and between aisle gallopades I tried to tell a much-rattled bridegroom about the car.

"Oh, hang the machine and the professor," he grunted. "Say, suppose one should drop the ring at the psychologic moment?"

"You make me tired," I rejoined, sadly. "You're no better and no worse than the painfully frequent proletariat bridegroom. He always asks that about the ring. It's traditional, vulgarly so. And you ought to know by this time that there isn't any psychologic moment at a wedding."

But he stared at me uncomprehendingly as I reminded him that the motor, in which his and my good money was invested, was even then decently assembled and waiting to be tried out.

"Do you know," he muttered, clutching my sleeve with agitated fingers, "I don't think I ever saw Leslie looking lovelier."

Whereupon, finding him hopeless, I turned for sympathy to his sister, with whom, as Leslie's maid-of-honor, I was to have much to say, after the custom of best man.

"I don't like his idiotic grin," I confided.

"Who—Billy's?" she asked. "He does seem a trifle upset. She is, too. They're all that way."

"I feel the need of fresh air," I remarked. "The wedding's at one. What do you say to a spin right after breakfast? I'll guarantee you a glimpse of the Yonkers City Hall and delivery, f. o. b., at home in plenty of time to dress."

She did not seem terribly impressed, so I whispered,

"The new car"—of course Billy had told his people about the car—"is finished. I'd like the worst sort of way to have you try it, Mary."

MERRIWEATHER'S MUSICAL MOTOR

Continued on page 387

A Budding Financier

HARRY, a bright youngster, was told by his mother that she would give him five cents for every dozen pins he rescued from the floors, thus preventing her year-old babe, who was just beginning to crawl, from finding them.

"What will you do with the money when you earn it, Harry?" he was asked by a neighbor.

"With the first five cents," said Harry, promptly, "I'll buy a paper of pins and scatter them all over the house."

PURE AT THE SOURCE.

MILK is the chief article of food in the sick-room and hospital. Every physician and nurse should know the source of supply before ordering in any form. It is not enough to know that it comes as "country milk." BORDEN'S EAGLE BRAND CONDENSED MILK the original and leading brand since 1857. Integrity and experience behind every can. ***

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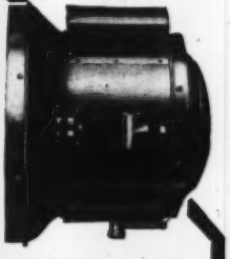

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We make many styles of lamps, designed to meet many requirements. Each is the best of its type for the price. There are twelve years' experience in lamp making behind Solars, and our 1907 line we claim to be the nearest to lamp perfection ever obtained.

Let us tell you which model will fill your requirements.

Our Catalogue will be sent free—it describes the entire line. Want one?

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NEW YORK CITY

Do competitive tests prove anything?

Exhaustive competitive tests prove nothing or they prove *everything*.

If the former, why have them?

If the latter be true, why seek for a Speed Indicator?

The most gruelling, most scientific, most elaborate tests for these instruments ever held in the Automobile world were those under the auspices of the Automobile Club of Great Britain and Ireland.

Only *one* instrument could stand *all* of these tests, and that instrument was the

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Winner of Gold Medal, and highest award for superiority in the following points: Accuracy, Steadiness of Indicator, Durability, Design, Finish and Workmanship, Reliability, Simplicity.

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Stews and Hashes, are given just that "finishing touch" which makes a dish *perfect*, by using

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THE ORIGINAL WORCESTERSHIRE

It is a superior relish for all kinds of Fish, Meats, Game, Salads, Cheese, and Chafing Dish Cooking. It gives appetizing relish to an otherwise insipid dish.

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AMERICAN RING COMPANY, Dept. 93, Waterbury, Conn.

THE DEVELOPMENT OF THE AMERICAN AUTOMOBILE

By E. R. THOMAS, OF BUFFALO

FASTER and at the same time more thorough work the world has never seen than in the growth of automobile-manufacturing in the United States. Not only has the output grown in an amazing manner, but, what is more important, the quality of the product has more than kept pace with it. The result is to-day the American manufacturer is turning out cars that are the most reliable in the world, cars that run everywhere every day.

The automobile-buying public and the manufacturer have always been a unit in what they wanted. Users demand a car that will "stand up," in which the materials are the best to be procured, in which the workmanship is as careful as can be lavished on machinery, and a design that will meet all conditions of travel, whether the owner wishes to tour the magnificent thoroughfares of Massachusetts or the rough and forbidding surface of Death Valley.

It was a handicap of several years' experience that American manufacturers faced in competition when they entered the market. One thing was an aid to them: the foreign manufacturers had not progressed far enough to have adopted any settled standards of construction; but they were rapidly reaching that position.

When the American manufacturer began business he scattered his efforts. Steam, electricity and gasoline all came in for experiments as a motive power, and all this time the manufacturer across the water had found that gasoline suited his purposes best. The American manufacturers, too, continued to experiment with horizontal motors and planatory transmissions, while their rivals across the ocean were seeing the advantages of high-powered motors with vertical cylinders and sliding-gear transmission.

Although he was behind at the start, it did not require a long time for the American manufacturer to catch up. He had the experience of foreigners to guide him after he had dropped a few of his own innovations in construction that only retarded him at the start. Their methods he took and improved on. He soon designed special machinery for the making of parts, and so adept was he at this that American machinery is now in use in every large automobile plant in Europe. As he struck his gait he brought out improvements in construction that are now copied abroad.

Another thing he had to contend with was the fact that during the years of his experiments foreign cars had been shipped into the United States, until, in public esteem, the high-powered automobiles from across the Atlantic ranked alone.

To capture the trade of his own country was the determination of the American maker, and to do this he found it necessary to build better and more reliable cars, cars that had higher horsepower, and to sell them for less money. Stronger cars than the foreign product were imperative, not so much because of the demands made by the competition as to meet American road conditions.

It has been customary for the Americans who have toured Europe to use the term "billiard table" in describing the roads they have travelled there, and the term aptly describes them.

American roads, as a whole, are a far different proposition. Even the conditions found in some paved streets in cities in this country would not be tolerated for a moment on the country roads of France and Germany. Here, except in a few localities, the highways are improperly drained, have had little preparatory work done on them, and practically no repairing. The result is that they are filled with ruts, bumps, gullies, and washouts. It is over these roads that American cars are forced to travel, and to their credit it can be said that they do so every day of the year and under all conditions of weather.

That is their great test of reliability.

The absolute necessity of building stronger cars was shown to the American manufacturer just as was the necessity for forging to the front in matters of workmanship, improvements in design, ease of control, and the many other things by which reliability of performance could be brought about. The use of the best of materials, the installation of special machinery, the employment of the best engineers possible, all have been factors in the success of the American manufacturer. Some have gone even farther than this, and have supplemented their corps of domestic engineers and designers with the services of the best talent to be found abroad.

But there is another thing which has played a large part in this struggle for commercial supremacy. That is the systematic cooperation of the manufacturers who operate under the Selden patent. Some years ago the best metallurgists in the country were secured, and laboratories established where it was found that certain grades were the best for certain uses, or where faults were found or where any room for improvement could be discovered; the facts were at once made known to the members of the Association of Licensed Automobile Manufacturers.

In addition, a mechanical branch of the association was formed which has for its membership two representatives from each of the companies in it. These men, from thirty-two of the great automobile plants of the country, meet at least once a month and discuss matters of vital importance in the manufacturing of cars.

THE FUNCTION OF THE GASOLINE MOTOR

By GEORGE L. MUNN

ELECTRICITY is the world's power ideal, but it is as yet very strictly limited; and a base of supplies, such as not every country grocery can maintain in a barrel, is a necessity. It binds its wagon almost as the wire binds the trolley-car—to hard-and-fast lines. Time will solve many things in electric traction, but meantime, and for a long time to come, we have the untrammelled and independent hydrocarbon gasoline car. Other oils are used, but this story deals with gasoline, consumed far and wide in an enormous total quantity that increases almost beyond the power to produce it. We all recall the Chinaman and the trolley-car, with his puzzled "No pushee, no pullee," and even while we know what it is that pushes and pulls, who does not wonder at the tremendous bunch of energy that is hustling that elephantine truck over the pavements, piled high with merchandise, until its overtopping load makes it look like one of the elephant's gigantic ancestors?

This is not a discussion of engines, however. This is a tale of business, of "Get there and get there quick," for that is the modern open-sesame to all progress. The writer realizes that the discussion with the keen buyer comes down to mechanical details and the mathematics of the proposition, but the great public, even the great using public, cares little for the calculations of the expert. "What will this machine do?" is the one great insistent question, and aside from those who want a machine, stands that great array of interested ones who love the story of giants laid low and heights won. No problem in mechanics ever had bent upon it such an array of trained minds as has solved this motor problem and is ceaselessly perfecting it.

Coming to the front at this time, it has also come in the up-sweep of the tremendous wave of prosperity, and expense has been almost the last consideration for maker and buyer alike. Yet both are strictly practical. "What can the horse do and what can the car do?" is the question which nothing but proof will satisfy. Examples are endless. Over one tropic coral road of about thirty miles three gasoline motor-cars for passenger traffic replace thirty-two coaches and one hundred and fifty horses. "Slow coaches," to be sure, and wofully abused horses, but that is the story of accomplishment. Operating expense about five and one-quarter cents per mile.

A twenty-four horse-power gasoline truck covers a seventeen-mile round trip four times a day, and delivers four tons of crushed rock per trip, sixteen tons; total expense thirty-four cents per ton. Compare this with a double team making one trip, carrying three tons at the outside, at two dollars per ton expense.

A seven-ton truck averages forty miles per day, on fifteen gallons of gasoline, at eleven cents per gallon. Fuel, $1 65; oil, 25 cents—total, $1 90, or $592 80 per year. The driver receives $624. Without adding repairs or depreciation, compare this total of $1216 80 with the cost of running the three heavy teams, three men each at $624, three expensive horses to feed, and care for as tenderly as a new baby, with a broken leg now and then, and he horse "all in." And this big truck requires but about half the space of the team, to either operate or stable. It will turn in its length, and back and crank in a street where the horses could hardly work and would fret themselves helpless. The truck never gets scared out of its "hoss sense," which David Harum declared was a myth, anyway, and the anxious driver, harried by orders from the house, need have no fear of broken wind or the Humane Society.

We hear, from Cape Colony that the ox-cart still competes successfully with the railroad. Plenty of wagons, plenty of grass, and time and labor of no account. But some bright day a gasoline motor will astonish those mild-eyed kine, and they will be unyoked for the last time. What a motley caravan it is that now goes straggling into the mists, because at last a power has been found that goes where it is wanted to go, and has no nerves to be accounted for. The prehistoric ox-team of the Transvaal, the camel, pack-ox, and burro, the prairie schooner, the mule-team, the horse, and all the devices he hauls—a picturesque parade that dates from the dawn of time, moving before the locomotive of no rails, the trolley of no wire, and the engine that drinks nothing but its own fuel.

The Stearns

The Car with the White Line

AMERICA has not produced a rival to the Stearns. We are ready to show any intending purchaser of a high-grade car to his entire satisfaction that he must import a car at double or more cost to get its equal.

2100 hours' labor by the most skilled workmen in the world are put on the finishing alone of each Stearns car. No other maker in the world gives so much time to anything but a special racer. It is this unmatched care employed in working out a perfected design from the finest materials so far discovered in the world that proves that the Stearns is "The Best Automobile."

Immediate Delivery. $4500. 30-60 h. p. The easy-running qualities of a "30" in highest perfection — the power of a "60" when needed. The catalogue tells how. Write to-day.

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SCOTTDALE, PA.: Scottdale Automobile Co.
CINCINNATI, O.: Hughes Automobile Co., 608 Broadway.
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There is no method of making friend

JOHN FARSON, Chicago, says of his last years' service:

"I have used Morgan & Wright Tires on my National this year, and same have been very satisfactory."

A. C. BENNETT, Automobile Dealer, Minneapolis, says that

"By comparison of actual service rendered, Morgan & Wright Tires have given the best satisfaction from every standpoint of any tires used. Have given *more mileage with less repair and at the close of the season were in better condition* than any of the other makes."

F. E. WADSWORTH, President of the Michi[gan] Steel Boat Co., Detroit, says:

"One of my Morgan & Wright Tires has trav[eled] 5000 miles in this country and 6200 miles in Eur[ope] and is coming back to America without one str[and] of foreign air in it. *It does not look as though the tire had run to exceed* 1000 *miles.*"

J. A. TILDEN, South Boston, Mass., says:

"For the past two years I have used Morgan & Wright Tires and have found them entirely sa[tis]factory. I ran 30" x 3½" Dunlop-pattern tires [over] *miles without developing defects of any kind*, and [tires] obtained nearly as good a record from some o[ther] I do not know of any other tires that give such [uni]form satisfaction."

After you have ridden on these tires for a few thousand miles you will understand why they are called *good* tires.

MORGAN & [WRIGHT]

ARE GO[OD]

THE uniformly high grade of service which [these] is commanding the favorable attention of [motorists] actually reducing the cost of car-maintenance [and] to enjoy their cars to the limit.

A handsome twelve-page booklet will be sent on request. In it they are entitled to the character [of] the

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nqual to the method of making good

chi. FULMER, Cleveland, O., says:

"It affords me great pleasure to state that I have riven my car equipped with a set of your quick de-achable tires *since March 1st over all kinds of roads,* nd *in all kinds of weather, without a single puncture,* r *tire trouble of any kind.* Your tires have given me he best service of any I have ever used."

DICKINSON, Southern Belting Co., Atlanta, Ga., says:

"It is a pleasure for me to say that I have had your res in continuous use on my car for the past six onths and they have proven very satisfactory indeed. *aking into consideration our rough streets, I think eir record has been remarkable.*"

F. C. MALCOMSON, Pence Auto Co., Minneapolis, says:

"I am very glad indeed to add my hearty testimonial on Morgan & Wright Tires. *I have driven a set of your tires nearly seven thousand miles during the past season with but two punctures.* The record speaks for itself, and I am certainly a staunch believer in the quality and durability of the Morgan & Wright Tires."

RALPH TEMPLE, Chicago, says:

"I feel sure that there is *no better tire made*, and it has always been a pleasure to recommend them."

IGHT TIRES

TIRES

It is next to impossible to find a motorist who has experimented with other brands of tires AFTER having tried Morgan & Wright's.

tires are giving, under every possible condition, sts in all parts of the country. They are hundreds of motorists, besides enabling them

on request to motorists who believe referred to in the above letters.

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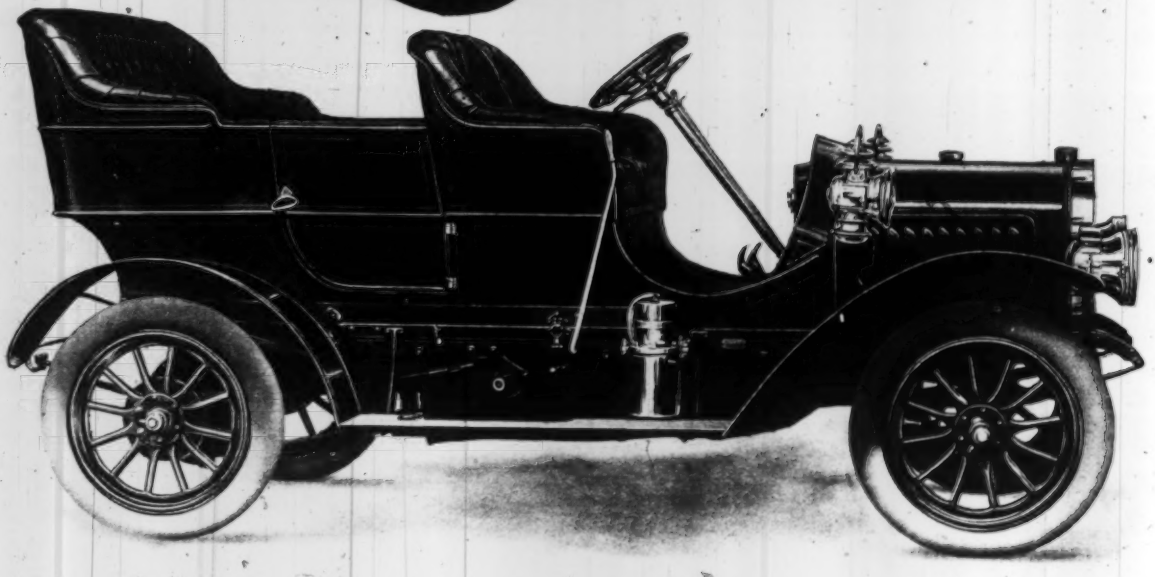

Model 21. Price $1,350

The Car of Steady Service

In these "show me" days, the discerning buyer judges a car by its record rather than by promises.

A Rambler Type One, the immediate prototype of Model 21, has just completed a non-stop run of 2,000 miles—and this after three years of continuous service aggregating over 40,000 miles.

At the completion of the run the car was turned over to two eminent technical engineers, who carefully examined every working part and reported the condition of the car to be such that an expense of less than $25 would replace every worn part, and would render the car as good as when it first left the factory, except in tires, paint and finish.

In Model 21 is combined every good feature of the earlier model, with such refinement in detail as would naturally result from three years of logical and scientific development of the simple power plant.

Equipped with the Rambler unit power plant, comprising a 20-22 H.P., double opposed motor, planetary transmission and multiple disc clutch, entirely enclosed in an oil and dust tight case, Model 21 is beyond question the most efficient, reliable, convenient and accessible car ever built.

You cannot afford to order your new car without examining this superb model. A demonstration will convince you that it is the *right* car at the *right* price.

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SPECIAL AUTOMOBILE STEELS

VANADIUM, THE NEW ELEMENT, IMPARTS QUALITIES TO STEEL WHICH ARE LITTLE LESS THAN MAGICAL

By HENRY FORD

IF there has been any basis for the claim that foreign-made motor-cars were superior to the American product it has been the fact that until recently the American manufacturer was unable to obtain metals, particularly steels, that possessed the necessary qualities to fully meet his requirements.

America is by far the largest steel-producing country in the world, but the demands for ordinary commercial steels have been greater than the output, and consequently our mills have not had the time nor felt the inclination to go into the special steel branch of the art save in a purely experimental way.

The requirements of the motor-car, with its enormous power in proportion to weight, the high speeds of which it is capable, and the severe stresses frame, axles, and other chassis parts are therefore called upon to withstand, have confounded the engineers and exhausted the profoundest lore of our metallurgists. A people who occupied the foremost position in the engineering world—the greatest builders of locomotives, of bridges, and machinery of all kinds—we still possessed little knowledge that was of value to us when confronted with the problems which arise in and are peculiar to the construction of the modern road locomotive; and we had no steels that were at all adequate for our needs.

American methods of manufacture and American workmanship, both of the hand and the machine, are superior to those of the older countries—many hoary superstitions and beliefs to the contrary notwithstanding. European makers are studying American methods and importing American automatic machinery as fast as they can get it—which, by the way, is not very rapidly, for never before was the demand for all kinds of machine tools so greatly in excess of the supply as at the present moment.

The question of supremacy in motor-car building, as between the American and the foreign producer, resolved itself into a matter of materials. With proper steels at our command the "Yankee Peril" would become a reality, for not only will the tide of import subside, but we shall soon begin to make serious inroads on European trade.

The problem was not merely to obtain a steel that would carry a load or withstand the severest single strain or shock to which a car would be subjected in the life of the machine, but a metal of such toughness and tenacity as would successfully resist the ravages of vibration and fatigue. Fully eighty-five per cent. of the stresses which the various parts of an automobile are called upon to withstand are of the kind known technically as "dynamic."

In other branches of engineering a steel that would behave well when subjected to a steady load or a slowly applied bending action, and of sufficient ductility to permit of deforming greatly before finally breaking under the load was sufficient for all requirements. When applied to automobile construction, however, it soon became apparent that ductility under such circumstances did not necessarily imply the certainty that the metal would behave equally well under stress applied in a different manner; steel which showed great toughness and ductility under static loads was found to fracture like glass in some cases under the influence of shock or of constant vibration, such as that with which we have to reckon in an automobile.

Various alloys of nickel and chrome steels have been applied, and with varying degrees of success. Chrome adds toughness to steel when used in homeopathic quantities, but when used to the extent of more than about one per cent, its effects on the steel are so injurious as to more than counteract the benefits derived from it. Nickel, while adding certain static qualities, is wholly devoid of dynamic virtues.

To quote the views of an eminent English metallurgist, Mr. J. Kent Smith:

"Heretofore the automobile engineer has contented himself with steels which possessed the necessary static qualifications—in other words, about fifteen per cent. of his requirements—and having made sure of this small percentage he hoped that in some way he had obtained the other eighty-five."

Recently a new element has entered the special steel-making industry, and one which will revolutionize American metallurgy. I say American, but the term need not be so restricted, for while this element is known to a limited extent in Europe, especially in England, it is by no means universally known or—for the best of reasons—used in motor-car construction there.

I speak of vanadium.

This mineral element, when judiciously used, imparts to steel qualities that are little less than magical, and which are well calculated to meet the most severe requirements of the automobile engineer.

The question naturally arises, Why has not this valuable element been more widely known and used in the past? The answer is a simple one. Until within a few months the entire output of the world in vanadium has been about two hundred pounds per month. This had to be extracted by very expensive processes, and even then the supply, limited as it was to two or three sources, was sufficient only to give it an academic value. In other words, while most metallurgists knew of the existence of vanadium, and were to some extent aware of its value in steel-making, where dynamic qualities were desirable, it occupied a place similar to that of a more recently discovered element, radium—we know its wonder-working qualities, but its price of one million dollars or so per pound renders this knowledge of little practical value to us.

Fortunately for the automobile industry, and still more fortunately for the automobile user of the future, a large source of supply of this valuable mineral has recently been opened up, and vanadium in commercial quantities is now available to the American steel-maker. During the past few weeks exhaustive tests and experiments with vanadium-chrome steels have been made at the United States government proving-grounds, both in armor-plate and projectile forms; and no less interesting tests have for several months past been carried on by automobile engineers, with the net result that vanadium steel has proven to be the metal *par excellence* for automobile construction.

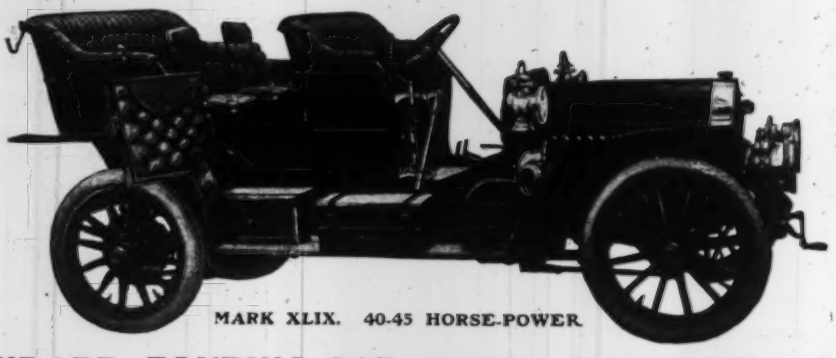
Unlike nickel, chrome, manganese, and other mineral elements that are used in special steel-making, vanadium contains within itself no virtues; but in its action on the other elements it confers upon the steel almost miraculous properties—for be it said the most successful application of vanadium lies in the direction of quatenary steels, such as chromium or nickel-vanadium steels. In order to obtain the best results with these elements it is necessary to add the vanadium in small doses and with proper precautions, as vanadium is a very powerful medicine and possesses to a marked degree the property of "elusiveness." To use a simple term, it acts as a physic on the other elements, and in a technical sense retards the segregation of the carbides, and thereby produces a steel of very fine texture and of great uniformity, as are clearly shown under the microscope.

For service in automobile axles, frames, gears, engine-crank shafts, and driving shafts, vanadium-chrome steels have proven superior to anything else ever produced for this particular service. Of course the particular alloy which is the most suitable for frames is not equally suitable for crank-shafts or for gears. But various grades of vanadium steels—various alloys possessing the different qualities to meet the different kinds of service—are now produced on a commercial basis in America. One of the advantages of vanadium is that its use permits of the application of a larger percentage of chromium than would otherwise be permissible for the reasons previously outlined. In short, without going more exhaustively into the matter, it may be said that by the introduction of this new element in steel-making the strength of an automobile axle or a crank-shaft may be doubled without increasing the dimensions or weight, and the working capacity and shock-resisting qualities of that member in actual usage multiplied many times.

Just to what extent vanadium will prove valuable in brass, aluminum, iron castings, and other metals used in motor-car construction has not yet been fully determined, but many eminent scientists are now at work on these problems, and the results so far have been most gratifying.

Fortunately for automobile manufacturers and users the industry has attained to such proportions that its demands now merit the attention of steel-makers, and vanadium, having come within commercial reach, nothing is left to be desired in the way of materials to meet the severest requirements of the engineer. This, combined with American methods and workmanship, will produce automobiles of a quality unsurpassed in any particular by cars made in Europe—a claim that in all sincerity and candor we have not hitherto been able to make.

Columbia



MARK XLIX. 40-45 HORSE-POWER

STANDARD TOURING CAR, $4500. LIMOUSINE, $5500

WE submit that no other high-powered car on the American market contains so many exclusive features of definite, genuine value, and to prove this statement the prospective purchaser has only to compare MARK XLIX, point for point, with any other car in which he is interested. With regard to its mechanical features we refer the investigator especially to the quality of the steel used for the sawed-out crankshaft, the sliding gear transmission, bearings, axles and all other vital parts. The steel used for these members was chosen after a most thorough investigation, and each is made of the best material that could be found in the world for its special purpose. A prominent and important feature is the new Multiple Jet Carburetor, which positively maintains a correct explosive mixture under all conditions of engine speed and throttle opening without sacrifice of power or fuel. This carburetor combines two carburetors in one, the two devices working together so as to require no more adjustment, attention or care than a single carburetor of any of the older patterns.

MARK XLIX.

MARK XLIX LIMOUSINE

The body structure, both in the Standard Touring Car and the Limousine models, is the best ever devised. The lines of the bodies are determined by considerations of both art and utility. All of the seats are of extra depth and width, and either model carries seven people in perfect comfort. The rear body of each type is of especially ample proportions and has very broad entrances closed by doors with full outward swing. The lower rearward curves harmonize perfectly with the general design and have a tendency to deflect dust. The angles of the seat backs are such as to give, in combination with carefully proportioned cushions, seats that are exceptionally easy and comfortable. The upholstering is of the richest and most enduring character, forming a distinctive Columbia feature. Both in color scheme and execution the painting of these cars is unequalled in the product of any other maker.

Mark XLIX perpetuates, with various important improvements, those high-powered Columbias which in past years have won many contests determining reliability, speed, hill climbing and capacity for all around hard use. Among important Columbia achievements may be mentioned twice breaking the Chicago-New York Road Record, winning the Mt. Washington Hill Climbing Contest in 1905, making a perfect score in the Glidden Tour and winning the Crawford Notch Hill Climb in 1906, breaking the San Francisco-Los Angeles record at better than express train speed, and more than 50 other events in the past three years that prove Columbias to be consistent winners.

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Separate catalogues of Columbia 24-28 H. P. and Columbia 40-45 H. P. Gasolene Cars and Columbia Electric Carriages sent on request.

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Member A. L. A. M.

"Are you going to take the professor, too?" she asked.

"Not unless you wish him as chaperon," I replied, after which she reflected a moment, and then decided that she would go.

"I really had to sneak away," she confessed, as she snuggled against the cushions, her face tantalizingly invisible behind a brown veil.

This was the day of the wedding, a sweetly tempered May morning, one quarter-hour past nine.

"The house is so upset over Billy's last moments of bachelorhood that there isn't any real breakfast. I had a scrap by myself, and slipped off. You're sure to be careful, Larry? It would be dreadful if I should be late. I need just forty-five minutes to be put into my war-feathers. And, oh! isn't it a beauty of a car?"

"Wait until we are out of the city's choking confines," I counselled. "Delay your transports until we slide smoothly beside flowered meads and meadows mild. Then, as we skim like birds along the King's Highway, gentle strains of music, such as shall befit our mood"—I broke off from the sheer joy of it. "What do you think of that for advertising language?" I asked. "The professor and I have been talking over a little brochure for properly setting forth the merits of the motor."

Mary smiled. "Hurry, Larry," she ordered. "We need a breath of meadow air, goodness knows. Think of all the stuffy handshaking the receiving-line will have to endure at Sherry's."

We had slowed down to a demure eight miles an hour through Mosholu Parkway when I fumbled for key to the fount of harmony. Mary had spoken nothing since we had left Harlem River behind us. Several times I had glanced over my shoulder and observed her, prettily relieved by the leather's dull maroon. She was tired, no doubt. I fell to thinking seriously about Mary. It seemed rather unfair that Billy should do all the marrying in the Britton family—Billy being a great deal older than Mary, too. Of course, I had never said anything that might lead her to suppose—but, then, I had an idea that perhaps she might have guessed.

So it was with a pensive finger that I set the canaries singing. And they *did* sing. The hum of tires was utterly lost. The "professor's" touch had been too sturdy. Louder than any automatic piano-player made by man, Merriweather's musical motor shot between the park's fresh green to the accompaniment of the intermezzo from "Cavalleria Rusticana."

Lips behind the brown veil burst into speech.

"Oh, Larry, turn it off! That is horrid!" they cried, while the intermezzo died away in a protesting wail.

"It isn't my fault," I explained. "The professor chose this musical menu. You see, our idea is to cater to the masses. Therefore he probably stocked up with popular tunes."

"As an invention," she admitted, "it doesn't seem half bad. I can fancy lots of people who might like such a plaything."

"It has big possibilities," I said. "Think of the many cases in which it might prove to be a life-saver. Fancy yourself at nightfall hopelessly removed from civilization. To while away the weary hours until daybreak you merely turn on a few soothing bars of harmony."

"And if the wolves are particularly threatening," she continued, "a single volley of the 'Rusticana,' or, possibly, 'The Angel's Serenade,' delivered at fifteen paces, will lay the whole pack stricken at your feet."

"You are pleased to jest," said I; "but in the end the professor, Billy, and I shall convince you."

Here we came to a dividing of the ways. Either looked promising, and I slowed down in indecision. "It wouldn't do to take the wrong one," I remarked. "I believe it is the right."

"Nonsense!" exclaimed Mary. "Can't you see that road is barely worn. Any self-respecting chauffer would know at once that it is the left."

"If I remember aright," I ventured, mildly.

"But your memory is a traitorous thing, Larry, as I well know," she announced, with finality. Upon hearing which I nodded, touched the speed-lever and swerved to the left. I knew, after we had gone a scant hundred yards, that it wasn't the right way. But I'd learned long ago to sit tight in a boat when orders were given.

As we swept around one abrupt turn, sending last year's leaves swirling—I would have wagered they'd never been touched by wheel before—an insanely cocky squirrel chattered at us, anchored in the path dead ahead.

"Lood out!" shrilled Mary. "You'll run him down."

"Watch me!" Braggart I! I meant to steer over the foolish thing; and I did it, leaving him astonished where he had been scolding, unharmed, the tires having slipped by on either side.

"That," I boasted, leaning to confront her, "is what I call clever piloting. See, the beggar hasn't yet had time to run."

My eyes were intent upon the squirrel and Mary. And as my gaze became fixed my steering grasp relaxed insensibly. No car would have been to blame for taking the bit in its teeth then. There was a tug at my loosened arms, a quick realization of tree nearness, and the machine was trying to bore a passageway between two young oaks that calmly restrained the whirring object rasping at their bark.

"I told you it was the wrong road," I could not resist saying, as I shut off the power and sprang over the wheel.

But she was in no mood for recrimination, I plainly saw. "Oh, Larry!" she gasped. "It won't do to be delayed. The wedding is at one."

I had clean forgot the wedding on account of the squirrel and letting the motor get its head. The shock of realization set me to work in a jiffy.

Now, even a bumping like this never really puts a good car out of commission, and I loathe the fool who is found sprawled with repair kit, save in extreme cases. But I glanced stealthily at my watch, and saw that it was approximating eleven. I could hear the tapping of a slight but determined foot as I grovelled. When this tapping was loudest I felt that, perhaps, after all, underneath the car was the best place I could find for the moment. Then in my tinkering — the gears were all right, thanks to an honest factory —my wrench touched some nerve ganglion of the professor's system.

Succor was there none, for I was helpless, not knowing why my unhappy finger had conjured up the geni who bade fair to wreck many things. There I lay, while, overhead, wearing the cracked tone of a hurdy-gurdy in decline, the ghost-tinkle of an ancient street song—which I had fancied long since laid — made hideous the neighborhood:

"Oh-h — oh-h — Ma-amie!
Ain't - a - you ashamey?
Tell me are there any girls at home like you?
A disposition shady,
But a perfect lady,
A beginner, but a winner,
Ma-aa-mie-eeh!"

Echo of the frightfully cheap ditty smote the new-dressed oaks. Gladly would I have remained concealed. But the summons was not to be denied.

"Get up at once and stop that disgraceful noise," it bade me.

Weakly I emerged. For the first time in

Drawn by Dan Sayre Groesbeck

"Here's a man with a million-dollar idea in his attic and thirty cents to push it along"

my mad auto career I felt grateful for the screen of grime which, I knew, was partially masking the crimson of my mortification.

"Upon my honor, Mary," I began in the din, "I'm not at all to—"

"Stop it, Larry," she entreated; "even if you have to hurt the car."

"The car is hurt already," I demurred, none the less reaching hastily for the switch, as the glare in her look threatened to become scorching.

Again the blessed silence, but yet her reproachful gaze seared my vision, and the Parkway was not alluring. To me, standing wrapped in ruminative vein, her words came stingingly. She spoke, after consulting the ridiculously minute timepiece of her châtelaine.

"The wedding is at one." How distinctly brittle her utterance fell in the wood-hush. "It is now eleven. And, as I told you at the beginning, I can't possibly get into my gown in less than three-quarters of an hour."

Sometimes, tradition has it, the worm writhes into more comfortable position. Thus I: "If the frosting on Billy's wedding-cake is half as sharply defined as the chill in your conversation, the caterer has not builded in vain. Referring to my own poor self, I was to have been a best man this day—somewhere in town, was it not? I was to have administered a parting vestry-room warning to a maniac in frock clothes bedecked with a gardenia. Yet what says the old saw? 'Forty miles from Schenectady to Troy,' etc."

"Please—Larry."

Vinci! It was a plea, and I melted, as is ever the wont of good men and true. Again I peered in unpleasant proximity to axles, and five spaces had not been ticked off upon Mary's châtelaine ere, cajoled into good humor, the car was heading for town. As we journeyed I felt that the factory would be proud of this motor. I knew none that violated the speed laws more consistently when urged. We slowed up ostentatiously at each distant glimpse of mounted patrolman, and lost a good fifty seconds in skidding over the river-bridge planking. But as Grant's Tomb blurred the Hudson's ribbon, I knew that, fate not frowning, we should yet make St. Botolph's—a trifle out of breath, maybe, but *in time*.

"The homestretch," I called back to her. "The newspapers are full of denatured alcohol these days. As for me, give me good-natured gasoline, and they may have—"

I did not finish. And Mary's scream of warning was superfluous. We were in the nineties now, and that quickening throbbing behind was not the creation of Merriweather. I had the car well in hand when the red-faced policeman drew alongside, his motor-cycle smelly and buck-jumping. An angry Irish face he had, but I was not faint-hearted. I dared not be, although I did not lean to reassure Mary.

"What in the name of Hivin?" he flung at me. "There wasn't no need of a stop-watch to get you right. I s'pose you're after imaginin' you're Joe Tracey an' Barney Oldfield rolled into one."

"We may have been a trifle careless, officer," I remarked. No, it would not *do* to display a yellow bill to this man in uniform. While I pondered, Mary to the rescue came.

"I'm so sorry," she wheedled. "But it was a matter of life and death. We'll be very, very careful if you overlook it."

Hesitation laid its uncertain finger upon Erin. And, marking it, I murmured, "A matter of life and death."

"Of course, if you'll take our number, we'll be glad to send around and—"

"Well, luckily, there ain't many people on the Drive," said the patrolman. "An' I'll just take down your number to make sure—"

I'll swear I had nothing to do with it. I was sitting like a graven image, clutching the wheel, that is, if graven images can feel pained. But to the three of us, as if from some awakened volcano of discord—while the car rocked with the ache of it—there burst the third of the "professor's" unhappy choices. Mephisto himself could not have planned more fiendishly.

Our companion in uniform glared, looked puzzled, and then infuriated. "You'll kid me, will youse?" he blurted. "Come on to the station-house an' be funny with the sergeant."

"They're hangin' men an' women
For the wearin' of the green."

The car's music swelled to a triumphant crescendo. There was a screech, and then no sound save an Irish policeman's thick breathing.

Upon the station-house threshold, after the tedious transaction of giving cash bail had been completed, I again looked at my watch. It was not at all necessary, for the accusing face of the precinct clock had regarded me as I chatted, very formally, with a not easily convinced acting captain.

"They threw ripe eggs at a vaudeville team that tried to get gay with the Irish in Brooklyn the other night," he had stated. I left under a cloud, with magistrate's court and Special Sessions to contemplate. And, from the tail of my eye, I could mark the acting captain suspiciously observing my departure.

I, in turn, eyed the motor as Theseus might have done the Minotaur with the fairest of Greek maiden sacrifices in its clutch. The

Drawn by Dan Sayre Groesbeck

"Stop it, Larry," she entreated; "even if you have to hurt the car"

Drawn by Dan Sayre Groesbeck

He was an odd sort of chap, all whiskers and spectacles

Drawn by Dan Sayre Groesbeck

"You blind 'Enery 'Awkinses," I scolded; "this is *the* car, your car, our car"

brown veil had curtained Mary's features ere we had reached the station, so the advantage of encounter was all hers.

"I don't know how to apologize," I began. "Of course you know that we can't possibly get to St. Botolph's for more than the end of the ceremony now, without dressing. To be very frank, we'll be lucky if we beat Billy and Leslie to Sherry's." I waited, but there was really no reason why she should have spoken. Then I said, "It was awfully sandy of you to have stuck by me and the motor, and not to have suggested taking a trolley-car home."

"Personally, I do not care to remain on exhibition longer than is absolutely necessary," she interrupted, icily. "The windows are full of uniforms. And as I should like to at least see Leslie throw her bouquet, I should suggest driving at once to Sherry's."

"But how can we explain?" I murmured, getting in. No answer, but within me my heart beat sturdily now, for silent and unbending as Mary was, she had refused to flee in my hour of need, a hopeful sign, indeed, in this afternoon of inferno.

Gingerly I piloted the car over slippery asphalt and trench-ripped crossing. It was like charioteering a load of nitroglycerin. Long ago I had lost all faith in the "professor's" switch. The little tin garage gods were all that we could trust in.

And now the striped awnings, and, trotting briskly, a pair of shining, wedding coach horses. Billy and Leslie, then, were just ahead of us. We must implore forgiveness while the moment of their fresh gladness was all absorbing, and before the string of carriages with annoyingly chattering freight had followed. Instinctively I sent the motor lunging forward. Bride and bridegroom were across the pavement, scampering blithely up the steps as our tires rasped a neighborly greeting.

Mary was upon the sidewalk carpet, too, ere the liveried carriage-caller had fairly swung the tonneau door. "Oh, Leslie, *darling*," I heard her cry. And then they were in each other's arms, while Billy stared, but a beatific Billy, to whose forgiveness access was easy, I know.

Of course people stared at us, sandwiched among proper wedding-breakfast garments. But you've no idea how distinguished one feels when he regards a lacklustre assortment of frock coats, and knows that he is set apart from it all by virtue of his wearing a flannel shirt and leather puttees.

I encountered the "professor," adjacent to the champagne, before I went up-stairs to help Billy out of his finery and pack his suit-case.

"You don't happen to have the wedding-march from 'Lohengrin' concealed in that wheeled charnel-house of yours, do you?" I asked. I told him what our orchestra programme had been.

"Ah, I see," he said, poising his glass thoughtfully. "No, my young friend, and I regret it. But, come to think of it, the next tune will do. It will do admirably. Try it on."

It was odd to find Billy so sober. "You're going for a very long motor ride, old man," I remarked, lighting a cigarette and pretending to be busy with his shirts.

"The non-stop, endurange-test-for-life sort, Larry," he said.

"Well, God bless you, Billy," I muttered. "And where the deuce have you put your razors?"

They had run the rice gantlet, and were laughing beneath the *porte cochere* when the car slid to the curb.

"Hullo," cried Billy, "that's not our motor."

I shoved them both toward the tonneau door, the chauffeur having been instructed. "You blind, blind 'Enery 'Awkinses," I scolded; "this is *the* car, your car, our car."

More rice, whereat they embarked hastily. Merriweather's musical motor shot toward the avenue lamps, beginning to wink in the spring dusk.

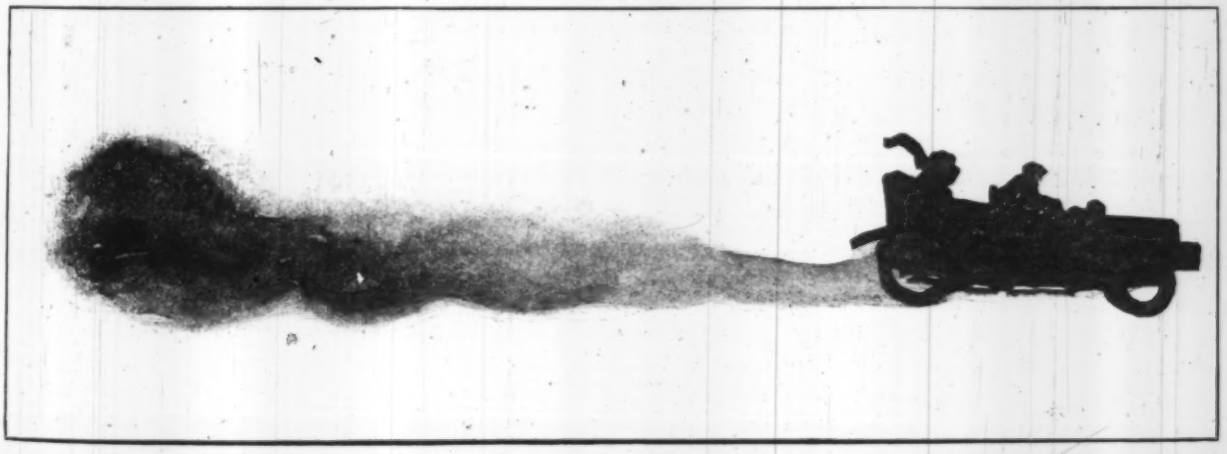
"Judas Priest!" I heard the carriage-caller mutter.

And, "Oh, Larry!" cried Mary, waving her brown veil toward the tip of Leslie's glove.

For, echoing above the hoofbeats of the hansom horses and the hum of the homegoing crowds upon the sidewalks, the departing car flung back at us, defiantly, not-to-be-repressed,

> "Rufus 'Rastus Johnson Brown,
> What you gwine ter do when de rent comes 'round?"

"Well," said I to Mary, evading, however, her eyes, "I'm glad that's all nicely settled. I've got an engagement to keep in the West Side Police Court."



THE MODERN APPIAN WAY FOR THE MOTORIST

THE PROJECTED AUTOMOBILE PARKWAY ON LONG ISLAND WHICH WILL GIVE THE MOTORIST A CONTINUOUS BOULEVARD NINETY MILES LONG AND FIFTY FEET WIDE, FOR HIS EXCLUSIVE USE AS A SPEEDWAY AND RACE-COURSE

By A. R. PARDINGTON

LONG ISLAND, like the Empire of ancient Rome, is to have its Appian Way—a great wide-stretching parkway, lined by miles of sea and Sound coast, by numerous spring-fed lakes, by ancient hills and waving trees, and beautiful vistas of wood and water. Rome's great highway was conceived for military and utilitarian purposes; Long Island's parkway to serve pleasure-loving classes only. Unlike the road from Rome to Brindisi, no domestic animals nor commercial vehicles will travel along its way. Motor-cars, designed and built for speed and pleasure, will be its sole travellers. Speed unrestricted, save that necessary to insure the safety of all users, will be permitted and urged. Police traps will be but a memory. Straight east to Riverhead and beyond—sixty, eighty, or ninety miles out—this parkway will be the embodiment of the new era. A railroad without rails, and the users supplying the rolling-stock—a smooth, dustless roadbed, hills, grades, and stretches of level—a perfect chute, if you will, with nothing in this country or Europe that can approach it!

Think of the time it will save the busy man of affairs, who likes to crowd into each day a bit of relaxation! He will leave downtown at three o'clock in the afternoon, take the Subway to a garage within striking-distance of the new Blackwells Island East River Bridge. In twenty minutes a 60-horse-power car will have him at the western terminus of the motor parkway. Here a card of admission passes him through the gates, speed limits are left behind, the great white way is before him, and with throttle open he can go, go, go, and keep going fifty, sixty, or ninety miles an hour until Riverhead or Southampton is reached in time for a Scotch at the Meadow Club, a round of golf, and a refreshing dip in the surf—and all before dinner is served or the electric lights begin to twinkle.

Possible? Yes, and sure to be an every-day occurrence, a common one for many. Think, again, what it means, if you live at Great Neck or Oyster Bay or Nassau, to take a cup of coffee and a roll, step into your high-powered runabout, open the throttle, and drive to Riverhead, sixty miles away, and back in time for an early breakfast with your family at seven or seven-thirty, depending on whether you leave home at five or five-thirty. Can it be done? Surely. I know scores of men who are counting the days before they can do this thing—do it regularly—and be "fit" when they take up their duties at the down-town exchanges. Think of the greater mental capacity, after two hours in fresh air, driving at top speed, with no thought but to go, go faster, and a thought for the car. There will be no grade crossings along this new Appian Way; every intersecting highway, trolley or steam railroad is to be passed either above or below grade, and each bridge to be constructed of reinforced concrete, thus eliminating repairs and vibration.

This magnificent pleasure boulevard, of a sort and for a purpose never before constructed, will be of varying widths—from one hundred to two hundred feet—and with a roadway approximately fifty feet wide. An artistic steel fence—and there will be no less than one hundred and twenty miles of it—will protect the racing-man and tourist from the careless pedestrian, the predatory domestic animal, and the heavy-laden farm vehicles or horse-drawn pleasure carriages. No slow-moving "rubber-neck" or "sight-seeing" automobiles will be encountered, as none will be permitted within the toll-gates. Landscape architects and engineers are working out designs for a general scheme of forestry and horticulture, so that within a few years the highway will be a veritable parkway—a beauty spot. The numerous toll-gates, permitting access and egress—and they will be placed at such intervals that the convenience of the motoring public will be conserved—are to be adaptations of the old English inn, unobtrusive architecturally, and so situated as to comport with the general surroundings. That menace to the motorist who now uses the ordinary country highways—the driver of a slow-moving team, who carelessly approaches from a crossroad—will be entirely eliminated by the construction of no less than fifty viaducts—highway crossings—all of reinforced concrete, from all vibration free, and as permanent as the parkway itself. The two or three steam and trolley roads to be crossed will be treated similarly.

As nearly as may be, the roadway will be entirely dustless. Road-building engineers and contractors, because of the unique conditions presented all over the country, are studying those road-building materials which can be combined into a perfectly dust-proof, water-proof, and non-skidding surface. Cement, hot tar, and heavy Texas or Kentucky oils have been suggested and are under experiment. Because of their abundance on Long Island, it seems probable that pit and creek gravel, sand, clay, and loam, variously mixed and treated, will serve in lieu of the heavier trap-rock metal, which is foreign to the locality and inadequate as to supply.

A most elaborate system of intercommunication, by means of telephones, has been carefully considered, and numerous automatic timing devices are to be installed. The times of any car under test, at any point during its flight, will be possible by the use of a most extensive set of electrical starting and stopping devices. Certificates, substantiating the claims of an owner who has a runabout or tourabout which he thinks can "burn up" the miles in seconds less than a minute, will be supplied, and those who scoff will be convinced. The many rash claims made for this car or that car, the many challenges issued, but never accepted for lack of opportunity, will be carefully considered, and the candidates tried out before they "really" meet—as meet they must. "Endurance" and "fuel-consumption" tests will be of daily occurrence. Motors running consecutively for ten, twenty, or thirty days or longer will be a frequent sight and objects of the most intense interest. Being disinterested, the management of this great "proving-ground" will be able to supply observing officials, whose sole duty and interest will be to record facts. The impetus to the manufacturing industry following the opening of this parkway for these purposes will be instantaneous and far-reaching.

This new Appian Way must, ere it is two years old, become a veritable "white way," rivalling Broadway. It is sure to be bordered by inns and cafés of that high class which appeals to the outdoor, sport-loving class, who eat better because they have driven long and hard, and who sleep better for having done both. Names now but scarcely known will be on the tongue of every user of this great parkway. Pronounce them and see how deliciously they roll from the tongue. Think of them, and be reminded of the early history of the island, when Indian lore and tradition were history, when the early settlers "fought, bled, and died," but retained the nomenclature. Ronkonkoma, Shinnecock, Quogue, Acquebogue, Napeague, Speonk, Hauppague, and many others—all

The County Court House at Mineola, Long Island, where Motor-racing on Long Island was born in the Summer of 1904

This Photograph was taken close to the proposed Automobile Parkway on Long Island

have their places in the early history of Long Island, and all to-day are on its map. Some of them are famous in the history of the country, while others are almost unspoken, save locally, or by the clerks in the post-office service. There are others, less euphonious, but none the less pleasing, as each tells its own story of disaster, deprivation, or early settlement. Read them over and analyze their meaning. One cannot go amiss in understanding the meaning of Scuttle Hole, Hardscrabble, Baiting Hollow, Bread and Cheese Hollow, Frie Place, Canoe Place, Ram's Head, Hog Neck, or Promised Land. I have known lifelong residents of Long Island to doubt that such names ever did or do exist, but they are readily located on any ordinary railroad map, and they were all pronounced long before the "oldest inhabitant" began to have his day. These are but few of the attractions of Long Island. Its chief charm is perhaps its natural and varied scenery. All of the sea and Sound coast of New York State belongs to the four counties comprising Long Island, while the beauties of Continental Europe may be found in the middle and towards the northern portion: Scotland, with its barren wastes, heather, and lochs, is outdone at Montauk Point. The north side is indented every few miles by a chain of practically landlocked salt-water bays, affording unequalled yacht anchorages, which are natural havens of refuge in stormy weather and the rendezvous for the New York, Atlantic, Brooklyn, and other yacht clubs while cruising to the eastward. To the yachtsman, whose objective is Newport, Woods Holl, or Marblehead, this motor parkway will be of the greatest convenience. His yacht may be sent to Port Jefferson, Greenport, or any yachting station to the east end of the island in the morning, while he remains at his desk in town. At closing-time he can meet his motor-car and make the nearest entrance to the parkway in short order. Then it is a dash to his anchorage, and after a night aboard, cruising in Peconic or Gardners bay, or in Buzzards Bay, he can return to his car and be back in New York before the clerk opens the door at eight-thirty the next morning.

Not alone is the New-Yorker to enjoy the benefits and delights of this new motorway. His fellow enthusiast of Boston, Providence, Hartford, and New Haven will surely find his way to New London, thence to Greenport by boat, or to Bridgeport and across to Port Jefferson, with but a few minutes' drive over fine roads to the parkway, reaching New York hours ahead of the time required were he to follow the Sound road, and in so pleasant and comfortable a manner that his envy will compel him, in time, to see that a trunk line from Boston to New York is constructed. The yachtsman a day late in joining the fleet can "overhaul" it by the use of his motor-car and by means of the parkway. He may do better; he may decide to establish for himself a home, a villa, or an estate, in which event he can go either east or west before he boards his "water-motor" or goes to his office.

Long Island, in the halcyon days of bicycling, was known throughout the land as the Bicyclists' Paradise. Because of the generally good roads and generally fair treatment accorded to the motoring public, Long Island, six years ago, won the very enviable title of "Automobilists' Arcadia." The motor parkway but calls attention to the important part Long Island has played in the sport since 1900. The first of no less than six class events, some of which have never been held, either in America or in Europe, were held over roads in Queens and Nassau counties. The first international event held in the country, the race for the Vanderbilt cup, was held over roads in part in Queens, but in the majority in Nassau County. The second and third race for this classic trophy was held in Nassau County, and it was because of the one fatality incidental to that race that Mr. W. K. Vanderbilt, Jr., and his associates in the sport decided that to preserve the sport it must be taken from the public highway and transferred to a private track or highway. As the deed of gift prevented the holding of the race on a special track, and as it was planned to construct a highway suitable to the conduct of this event, it soon became evident that original ideas must needs be developed. The result was the formation of a company, its incorporation, and the drafting of a plan which is now being closely followed.

The early completion of this special highway—the Appian Way—calls to mind the fact that much within the limits of Greater New York must needs be done to make it conveniently available. The completion of the great Blackwells Island Bridge, destined to be the natural artery of travel between Manhattan and Queens, is at least two years off. There is no assurance that its necessary approaches, both on the New York and Long Island shores, will be in readiness at the time the bridge is declared completed and ready for the enormous volume of traffic which now congests the ferries. Assuming that the bridge and its approaches are ready, each at the same time, what of the magnificent scheme of boulevard improvement for Thompson Avenue, Hillside Avenue, and the present Hoffman Boulevard, all of which now are totally inadequate? There remains much to be done on the part of the city and borough officials to make the "getaway" easy and safe. Brooklyn motorists are in even a worse plight than are those who claim Manhattan as their place of registration and residence. There is no route even moderately direct from Brooklyn to the great system of roads which cobweb Queens Borough and Nassau County. Concert of action, insistence at public hearings, and tireless effort are required to make this modern Appian Way the pleasure-spot that it is destined to be and remunerative to its promoters; the financial success of this venture means the construction of others, some longer, some shorter.

The men behind this parkway project—men of affairs;

Lake Ronkonkoma, near which the Automobile Parkway passes

Through Miles of this Sort of Land the new Parkway is to be Laid

of large affairs—having been accustomed to "doing things," may be relied upon to "do this one thing"—build this new Appian Way. The list of directors, all high in the business and financial world, reads like a page from *Who's Who* or the directory of directors: a few of them are William K. Vanderbilt, Sr. and Jr., Harry Payne Whitney, August Belmont, Colgate Hoyt, H. B. Hollins, Charles T. Barney, and Frederick G. Bourne. Twenty-six such names complete this, the most remarkable directorate ever gotten together. Their cooperation in a banking, railroad, canal, power-plant, or steamship proposition could hardly be secured, but when the great Appian Way, this motor parkway, was suggested, they were a unit, ready to serve and ready to assist in the financial backing required, all eager to facilitate its completion that they, with the great motoring public, might enjoy to the limit the pleasure of high-speed or more leisurely touring.

The progress now being made is phenomenal. A few months ago, or on October 10, 1906, no steps toward the accomplishment of this great object had been taken. It is expected that by April 1, 1907, work of construction will begin simultaneously at no less than sixty points, and that by October 1, 1907, the parkway will be in a state of completion, making it possible to hold the fourth contest for the Vanderbilt cup on Long Island, but not on Long Island public highways. Society next October need neither remain up all night nor lose its beauty sleep in order that the start may be witnessed. Racing from mid-forenoon to late in the afternoon will be possible, there being no general traffic to suffer by interference, incidental to the event or the attending thousands.

THE ADVANTAGES OF THE SIX-CYLINDER MOTOR

By DANIEL FERGERSON

THOSE who, from various points of view, watch the automobile development most closely, cannot ignore the latest radical departure, the advent of the six-cylinder motor as applied to road vehicles. Those who had the privilege of observing the European industry, as evidenced at the last Paris show, and more especially at the Olympia show in London, could not fail to be impressed with the seriousness of the European engineers in this particular. Naturally, the maker and the purchasing public give heed to this evidence of a new and somewhat radical advance, and search to find the significance and the advantages. There are two ways of accounting for this trend—either it is serious and meritorious, or it is for publicity, pure and simple. In this brief article it is the writer's purpose to submit a few thoughts on the first view, and as applied only to touring cars of high power. The users of high-powered fine cars demand many things, and from their view-point are entitled to them. Quietness, flexibility, highest efficiency, endurance, hill-power, and the full gamut of speed—these they naturally expect and demand. They expect, and rightly, too, that the automobile shall accomplish all these things without failure or undue effort, accommodating itself at the driver's will, without undue stress or mechanical strain, to the requirements of the congested city thoroughfare, as well as to the liberty of the secluded country road, and, I may truthfully add, on the highest gear of the mechanism.

Up to this time the four-cylinder motor has been regarded as the fulfilment of this ideal, and that it has done well is not an overestimation. But to the engineer, always seeking conservatively to achieve perfection, the limitations of the four-cylinder motor have been and still are obvious. He is confronted with the limit in the dimensions of a single cylinder, and finds, when he increases the sizes, new problems arise. The noise increases, flexibility decreases, there are more mechanical shocks, and vibration becomes more pronounced. Hence the only outlet for this thought is to increase the engine volume by additional cylinders. By actual demonstration he finds the six-cylinder motor a distinct advance at least, and incidentally discovers other collateral advantages.

But the six-cylinder motor must have the benefit of the most expert designing, the finest and most durable materials, and the most careful and efficient workmanship. Given all these, he can supply what the public demands in the most satisfactory manner, producing a car which promises to outlast in duration of service any yet devised. In this connection it is well to consider, also, the possible disadvantages with such intelligence as can be mustered before the new motor has gone into general public use. Naturally, the motor of given dimensions will weigh and cost more than its four-cylinder brother.

Equally, it is obvious that its base must be greater; hence, with prevailing fashions and good engineering, the wheel-base must be increased. Also, that the duplicating of working parts will entail more care and replacements of those parts. But to offset these, the other mechanical parts—clutch, gears, brakes, etc.—should wear longer and be less liable to break from shock, owing to the constant torgue obtained. It is the writer's view that the advantages briefly stated are worthy of consideration, and that the six-cylinder motor, in suitable cars, is a distinct advance, and possibly will herald automobile perfection in mechanical design.

I would briefly summarize the advantages of the six-cylinder motor in this wise:

1. Silence, by reason of the rapid sequence of explosions being practically continuous.

2. Flexibility, by reason of the constant torgue obtained by the constant impetus by continuous explosions, and the ability to run equally and smoothly at any speed from 150 to 1500 revolutions per minute.

3. Great power for all purposes, enabling the car to be driven at practically all times on the high and silent gear.

4. Absence of vibration on account of the perfect engine balance which can be thus attained.

5. Absence of mechanical shocks due to the foregoing, and thus making for longer use with less liability of breakages.

6. Less effort in starting the engine on account of the more likelihood of a cylinder being full of explosive mixture, which will be fired by switching on the spark from the seat.

7. Easier to operate, owing to less necessity for changing gears or nursing the engine when running slow or climbing hills.

8. Simplification of speed-change gear, there being no desirability for four speeds ahead, three being ample.

9. Possibility of making a car of a given power for touring purposes even lighter than a four-cylinder car of the same power.

10. Less wear and tear on rear tires, owing to more even propelling impulses.

In rounding turns

a long wheel base exerts terrific strain on your rear tires, and if the rear seats extend behind the wheels this strain is greatly exaggerated by the suspended weight of passengers creating leverage against the axle. In the design, material and making of

Pennsylvania Clincher Tires

the above contingency, and innumerable others equally important, have been deeply considered and successfully met. It is in *practice* that Pennsylvania Clincher Tires "make better" than any other make in the market.

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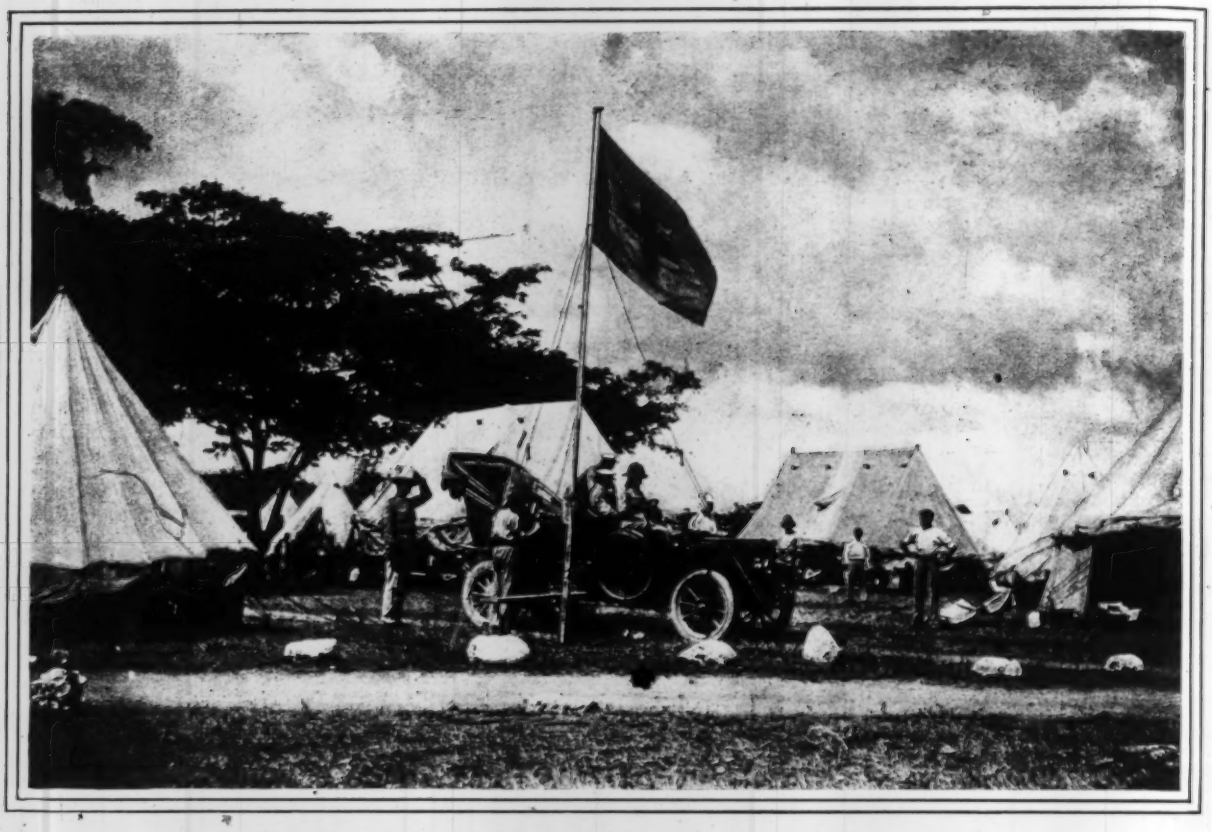

Bringing Physicians by Automobile to aid in the Relief Work at the Military Hospital, Kingston

The Motor-car put to beneficent Service in transporting Earthquake Victims to the Refugee Camp at Kingston

THE AUTOMOBILE AS AN AGENT OF RELIEF WORK

AN EXAMPLE OF THE EFFICIENCY OF THE MOTOR-CAR IN AMBULANCE AND EMERGENCY WORK WAS FURNISHED AT THE TIME OF THE EARTHQUAKE AT KINGSTON, JAMAICA, WHEN AN AUTOMOBILE CONVEYED A NUMBER OF VISITING AMERICAN PHYSICIANS OVER THE DEVASTATED AREA TO AID IN MINISTERING TO THE WOUNDED IN THE RED CROSS CAMPS AND ELSEWHERE

An Anti-Skid, Anti-Slip Device Right in the Tire

That's the new, successful "Midgley Tread" fitted to Hartford Dunlap and Hartford Clincher Tires.

Think what it means to dispense with the heavy, cumbersome, unsightly, unserviceable "Chain Grip."

Think what it means to be able to buy a tire—a tire, mind you, *not* a separate device—that will never slip or skid—even on ice!

Get this fact fixed firmly in your mind and you'll dispense with "chain" grip and any other kind of tire but Hartford Clincher or Hartford Dunlap, fitted with

"MIDGLEY TREAD"

Think of two hundred little "spikes"—like cat's claws—that grip the ground continuously. Mind you, of the four thousand on every tire, two hundred are always on the ground.

These four thousand little "points" are arranged on four endless spiral steel coils, running right in the tire.

As the tire wears these points become more and more pronounced—the top of the coil always remaining flat on the tread.

Yet this detracts not a whit from the resiliency of the tire.

How and why is this different and better than the chain tread?

Because the Midgley Tread cannot be noticed; it isn't as unsightly as the chain grip; because it never breaks; because it never chafes the tire—it is the tire; because it never gets too hot from friction; because it never throws mud and never wears the pavement (some states will not allow chain grips to be used); and because exhaustive experiments under every condition prove the Midgley Tread to be far cheaper than the old style chain and tire.

We've just published an interesting, instructive booklet entitled "Helpful Hints on Holding to the Straight and Narrow Road."

We send it free for the asking. Ask for booklet A.

THE HARTFORD RUBBER WORKS CO., Hartford, Conn.

Herbert Lyttle, *the famous driver, says: "There has never been any device to prevent skidding and side-slipping that was satisfactory until the advent of the Midgley Tread. You can say anything good about it and still be telling the truth."*

PERFECT TIRE CASE AT LAST!!

Endless—One Piece—Complete

Patent applied for.

No straps, no lace, no flaps. **Water and dust proof.**

EASIEST AND QUICKEST TO ADJUST

All sizes for all makes of tires.

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Save the boat factory's big profit and the labor cost. 21,311 amateurs—many as inexperienced as you—built boats last year by the Brooks System of exact size patterns and illustrated instructions.

Our Big FREE Catalog gives complete information about building boats of all sizes and kinds—quotes prices on patterns and complete knock-down boats, ready to put together. **Reduced Prices on Patterns.**

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A Great Country

MIKE. "This is a fine country, Maggie."

MAGGIE. "And how's that?"

MIKE. "Shure, th' pa-apers sez yez can buy a fóive-dollar money order for three cents."

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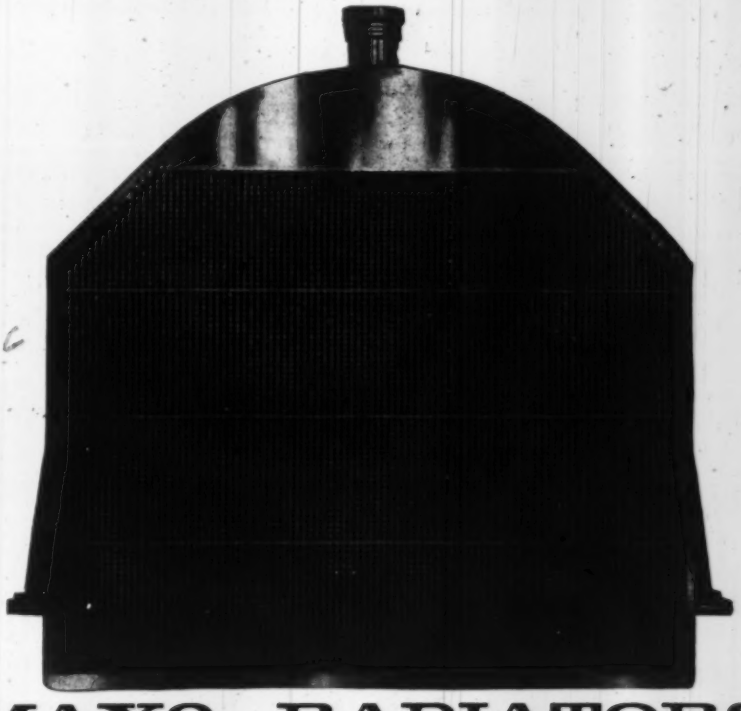

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The Car JOHN DOLSON Builds

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DOLSON "CANNON BALL"

Four cylinder, 60 H.P. motor. Combining beauty of design, elegance of finish and high speed with clean, simple, rugged construction and ease of control, the Dolson "Cannon Ball" is truly the Premier Roadster of America. Wheel Base 112". Tread 56", with 36" Wheels and 4½" Tires. Road Clearance of 11½". Will make a speed of 75 miles an hour on a good road. Wonderful hill-climbing ability because of enormous motor power. Chassis practically the same as Model "F." Complete equipment included in price. Standard color, bright red trimmed with black. Special colors to order. Price $3250.

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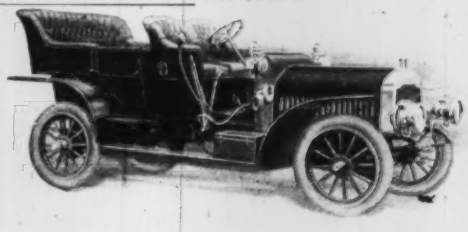
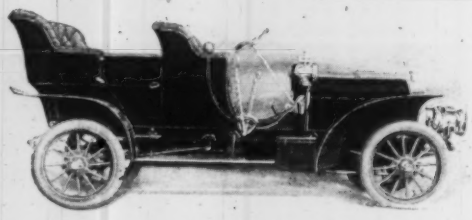


Pressed steel frame. Four cylinder 55-60 H.P., vertical water-cooled motor. All gears encased, mechanically operated valves. Special carburetor. Jump spark ignition. Disc clutch, selective type transmission, shaft drive. "I" beam front axle, floating type rear axle, both ball-bearing. Mechanical lubrication. Patented throttling device. Combined wood and metal body, seating seven. Wheel base, 125", tread 56", 34 x 4½" tires. Clearance 10½". Complete equipment. Price $3250, top $125 extra.



DOLSON "H"

In general construction practically the same car as the Dolson "F," excepting that it is smaller as to motor, body, wheels, and tires, with 111" wheel base, 9½" clearance. The Dolson "H" is without doubt more car for the money than is offered by any other manufacturer, and we invite for it the most searching criticism and comparison. Standard color, Napier green, upholstering in dark green leather. Fully equipped, 35-40 H.P., Price, $2500, top $125 extra.

Dolson cars are in use all over the world, and they have made good, no matter what the conditions of service. Any "car that John Dolson builds" will give you entire satisfaction.

Write for complete information on the car which particularly interests you. There is still some good territory in which we have no selling agents.

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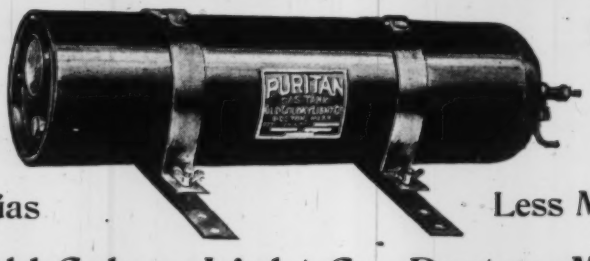

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Automobile Gloves

Will Last the Season Through

"Rist-fit"

The perforated back keeps the hands cool and prevents perspiration, giving perfect ventilation. **Grinnell Gloves** are soft and pliable, and all adjustments about the machine can be made with them on as well as with the bare hand.
Made of our famous **"Reindeere"** Leather, tough and strong, yet soft as velvet, and will dry out like new after washing. Tan, Black or Gray.
The "Rist-fit" gauntlet holds the cuff up, keeps out dirt, and prevents sagging.

Sent on Approval

We want to **prove** that the Grinnell Gloves for men or women are the best made—better than ordinary $5.00 and $10.00 gloves. Tell us your size and dealer's name, and we will send you a pair on approval. **"Ventilated"** and unlined,—$2.50 and up per pair. "Unventilated" (without perforations), Silk or Wool lined, $3.50 and up per pair.

MORRISON, McINTOSH & CO., Makers. 74 Broad Street, Grinnell, Iowa

The President Orders New Coins

BEFORE the end of this year gold coins of the United States of a new design will be struck by order of President Roosevelt. The work of preparing new designs has been placed in the hands of a distinguished New York artist. Mr. Roosevelt is of the opinion that the gold coins of this government now in use are inartistic, and after a consultation with Secretary Shaw and other Treasury officials he ordered the new designs. A great many have been completed, and will within a short time be submitted to the President for his approval.

The law provides that the designs on coins shall not be changed oftener than once in a period of twenty-five years, and that on each coin there shall appear an emblem of liberty, the year of the coinage, and the words "E Pluribus Unum." Beyond being bound by this general description, the President may do as he likes, and under the law he has a good deal of authority in prescribing just whatever figures or emblems shall appear on specie.

The gold coins now circulated have been in use fifty years or more, and the President, therefore, can at any time use his prerogative in beautifying them whenever he desires to do so. It is not his intention, however, to take to himself the choice of new designs; he will at an early day appoint a commission of prominent officials to pass upon the designs submitted to him. But even though the selection of the new designs will be the work of the commission, the new coins no doubt will be known as the "Roosevelt coins of 1907."

Why

A YOUNG lady who taught a Sunday-school class of young boys was often nonplussed by the ingenious questions sometimes propounded by her young hopefuls.

One Sunday the lesson touched on the story of Jacob's dream in which he had a vision of angels descending and ascending a ladder extending from heaven to earth. One inquiring youngster wanted to know why the angels used a ladder, since they all had wings. At a loss for a reply, the teacher sought to escape the difficulty by leaving the question to the class.

"Can any of you tell us why the angels used a ladder?" she asked.

One little fellow raised his hand.

"Please, ma'am," he said, "p'r'aps they was moulting!"

Ducked

SENATOR BACON recently told his colleagues the following story about an old Georgia negro who was notorious for his chicken-stealing, but who, after having been persuaded to attend a religious revival, had expressed his desire to live a better life, and was called up to be questioned.

"Well, 'Rastus," said the revivalist, "I hope you are now prepared to live a Christian life in accordance with rules of the church. Have you been stealing any chickens lately?"

"No, sah! I ain't stole no chicken ob late."

"Have you stolen any turkeys or pigs, then?"

'Rastus looked grieved when he replied "No, sah!"

"I am very glad to hear that you have been doing better lately," replied the evangelist, "and I hope you will continue now to lead a holy and Christian life, 'Rastus."

After the revival meeting was over, 'Rastus hurried out of the tent with his wife, who had heard the catechizing her husband had received. When they were finally out of everybody's hearing, 'Rastus drew a long breath of relief, and turning to his wife, exclaimed:

"Mandy, if he'd er said ducks I'd been a lost nigger suah!"

Whitlock Coolers

Manufactured by the
WHITLOCK COIL PIPE CO.
Hartford, Conn., U. S. A.
OVER 40,000 IN DAILY USE

HONEYCOMB TYPE

In addition we make cellular coolers, disc radiators of several types, hoods, exhaust and inlet pipes and headers, muffler pipes and bent and brazed work of every description.

We are now booking 1908 orders

WHAT CAR HAVE YOU?

Get Your Grade Of Monogram Oil

We have carefully prepared the grade of oil best adapted to each car. Our oil allows easiest action with least trouble in highest speed machines. Used by winner of Vanderbilt Cup. 5000 dealers sell it. Write us for further information.

Columbia Lubricants Co. of New York
78 Broad Street, New York

Would You Increase Your Pleasure in Motoring?

Would you eliminate the jar and shock occasioned by the rough roads over which you are compelled to drive?
Would you save repair bills, breakdowns and tire repairs?

The Kilgore Pneumatic Shock Eliminator

is guaranteed to absorb all excessive shock and jolt, and consequently to eliminate the dangers and displeasures of motoring over bad roads.

The Kilgore Pneumatic device controls both up and down motion automatically, yet comes into action **only** when the springs prove inadequate to the strain.
Requires no oiling, no adjustment and no attention after application. Ask your dealer about it or write us for descrip.ive matter.

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The LINDSAY Combined Timer and Distributor

Distributes the current from one coil to any number of cylinders.

Write for full particulars.

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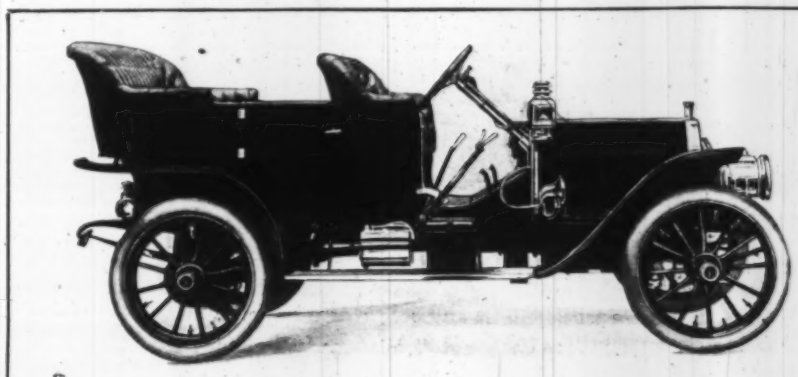

TO the seeker after a car that is absolutely dependable at all times, the WAYNE must appeal: Easy to operate, silent, strong, run at a low cost, its extreme simplicity giving assurance of immunity from trouble and a minimum expenditure for maintenance, it is essentially a machine for general service.

As a refinement of all that is best in automobile construction it stands in the forefront. No other car on the market contains more features that commend themselves to the discriminating purchaser, none so well equipped to give unfailing satisfaction.

The 1907 WAYNE challenges comparison with any other automobile made, either American or foreign, and stands ready to prove the claim that it is *the greatest value ever offered for the money.*

$2,500—Model "N" 30-35 H.P., 5-passenger car.
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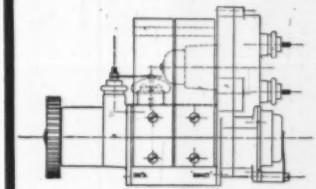
$3,500—Model "R" 50 H. P., 7-passenger car.
$2,500—Model "K" 35 H. P., 5-passenger car.

Descriptive catalogue sent for the asking.

WAYNE AUTOMOBILE CO., Dept. 12, DETROIT, MICHIGAN

Wayne

Komet Magnetos and Dow Coils



We wish to call the attention of every one using an ignition apparatus to our full line of ignition equipments. The "Komet" high-tension magneto is as perfect as can be made in every detail. No coil is used in connection with it. The timer is so constructed as to always obtain the same good spark, and it is an easy thing to start your engine with this magneto without spinning it. Back kicking of the engine is impossible.

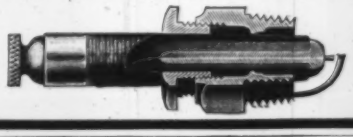
Everything we manufacture is made of the best material and shows the most excellent workmanship. Our motto is, "The best that can be made is just right for our customers."

Ask for special catalogues describing our magnetos, coils, volt-meters, ammeters, volt-ammeters, ball-bearing timers, switches, mica and porcelain spark plugs.

When you have trouble with your ignition, use the "Dow" equipment, and you will be satisfied in every respect.

The Dow Portable Electric Co.

Selling Agents for the Pacific Coast,
L. H. & B. I. BILL,
132 VALENCIA STREET
San Francisco, Cal.



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Southwestern Limited—Best Train for Cincinnati and St. Louis—NEW YORK CENTRAL LINES.

FORD

Two Errors Can't Correct One Mistake

Prompt Deliveries

COLONEL INGERSOLL USED TO SAY "to be a successful liar one must have a good memory; for one lie will only fit another lie made for that express purpose, whereas a truth will fit any other truth in the universe."

WE HEAR A LOT THESE DAYS about "hand-made" motor cars. (It's funny, but the same concerns who, a year ago, prated of "quality, not quantity," *as if the two were incompatible,* now build 1,000 to 2,000 cars per year and still expect you to believe it is "hand work," "personal supervision," and all that sort of rot.)

FORD CARS ARE MANUFACTURED—have been made in immense quantities and by modern American methods from the first. And the first Ford ever made is still giving excellent service—what of the "cut and try" contraptions made in that same year?

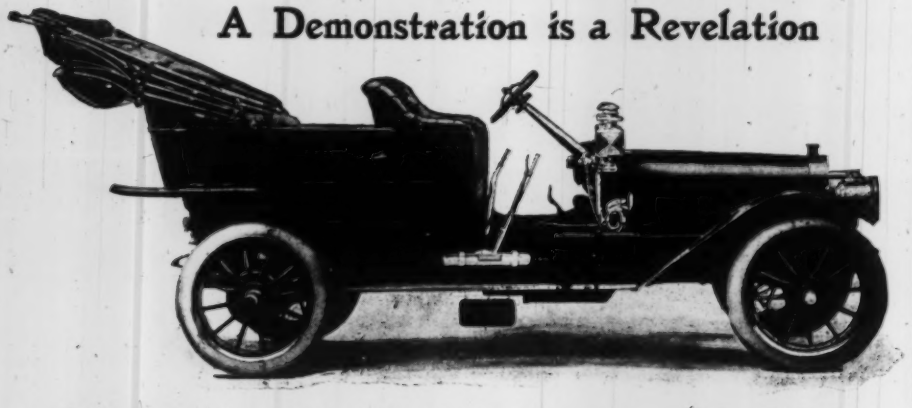
HAND WORK AT BEST is but a series of mechanical inaccuracies, each made to fit, as nearly as may be, another. Ingersoll would call them mechanical fibs; and making one mechanical fib to fit another does not cancel the error any more than two lies make a truth. And when you want to place a part, the maker will need a mighty fine "memory" to give you one that will fit—you'll find he forgot. You'll find that wherever the "personal equation" is permitted to enter, uniformity and accuracy are impossible.

SIX-CYLINDER (1907 MODEL K) FORD touring cars are the product of the best brains, the most perfect organization, the ripest experience and the most modern machinery known to the industry. Every pound of steel—several different alloys—is made especially for the Ford Company, from Ford Formulae, under the supervision of Ford experts, and then heat-treated in Ford furnaces. Result—no mistakes—no culls—no waste.

FORD COURTESY in the treatment of customers—replacement, cheerfully, promptly, gratis, of parts that show the slightest defect in material or workmanship—is made possible only by the knowledge on our part that (thanks to quality of materials and careful inspection after machining) the percentage of replacements will be very small.

1907 Ford Model K, 6-cylinder motor. 40 h. p. at the wheels; will climb anything the wheels can hold on the "high"; six to sixty miles per hour by throttle control alone—no need for transmission, except for reversing; two complete and separate systems of ignition—magneto and storage battery—jump spark; two sets of plugs; 120" wheel base; 34"x4" tires; all the latest features and improvements; the silence of an electric; the flexibility, the steady pulling power of a "six"; the simplicity and reliability of a—FORD. In quality, performance, and endurance a $5,000 car.

A Demonstration is a Revelation



$2,800 With top and full touring equipment $3,000

FORD RUNABOUTS (4-cylinder), Model N, $600; Model R, "edition de luxe," $750

Ford Motor Company, Factory and Main Office, **Detroit, Mich.**

BRANCH RETAIL STORES: New York, Philadelphia, Boston, Chicago, Buffalo, Cleveland, Detroit, and Kansas City. Canadian trade supplied by Ford Motor Company of Canada, Walkerville, Ont.

The Legislative Needs of the Motorist

(Continued from page 380.)

passed by the present-day locomotive engineers. Every vehicle should be registered, as well as having its driver licensed. In case a chauffeur is found guilty of taking out a car without the owner's permission he should be put in jail for thirty days for the first offence, and locked up six months for the second, with a revocation of his license in addition.

Where drivers are held up on the public highway and charged with a speed violation, I propose that the officer making the charge should serve the accused with a summons on the spot, note his number, and take his license, giving a receipt for the same, the return of the license to be dependent upon the settlement of the case in court. By doing away in this manner with the old form of arrest, the waste of time, the discomfort to the occupants of the car, and quite often the indignities heaped upon them are all avoided. The case could then be decided without the heat of personal feeling and with much better results to the sport, the public, and the police. No conviction for a violation of the law should be made unless the evidence showed conclusively that the defendant knowingly exceeded the speed limit or that the rate of speed at which he was driving was excessive or dangerous, having due regard to the use of the highway by others at the time. These are the points which automobilists would see incorporated in a new law controlling the traffic on the public highway, and with a rigid enforcement of the same it is believed a more perfect harmony between them the public and the police would result.

The Development of the Electric Automobile

(Continued from page 382.)

Electric cars of runabout types perfectly meet the requirements of many city and town users, but for this class of service in general the gasoline runabout is more favorably regarded.

Questions pertaining to the advantage and economy of electric delivery-wagons and trucks have been widely discussed, and have brought out a great variety of opinions. All investigators are agreed that vehicles of this class yield a greater return of value than horse equipments equal to the same amount of work, and many have decided that the return is much greater. At any rate, the great value of the electric vehicle for delivery service can be measured by dollars and cents, which is the thing of first importance to the business man. There are those who go so far as to say that the electric is practically the only system in use for commercial vehicles which fully meet actual service conditions. These vehicles, as turned out by leading manufacturers, are carefully constructed to meet the actual business and physical conditions of the service required of them, and their operation does not call for high-priced skill. The mechanical parts are simple and readily understood, and the application of the motive power is free from all elements of danger. The weight of the vehicle is reasonably proportioned to the weight of the load it is intended to carry, and all details of the equipment are carefully and substantially made. Delivery-wagon and truck bodies, as supplied by leading manufacturers, conform to styles which time and experience have shown to best serve business conditions and wants, and are symmetrical, well proportioned, and as artistically finished as the service required of them permits.

The future success of electric vehicles of the classes mentioned in the previous paragraphs is abundantly insured. There will undoubtedly be improvements, both in general construction and in batteries, but nothing of a sensational nature is anticipated by those who have given the subject the most thorough study. The purchaser of a 1907 electric car of reliable make may rest assured that he will get a vehicle that is completely up to the hour in style, finish, and in mechanical and battery equipment.

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Speedodometer

An Instrument of Precision

VAGUENESS plays no part in its operation. Under all conditions of the road, up hill and down, over "bumps" and through mire, from one mile to seventy-five, the hand points, **without vibration,** to the **exact** speed, and this condition prevails whether the instrument has been in service for one day or several years. It is known as the one "dependable" indicator.

Let us send you all the interesting details. Write for Catalog B to-day.

Winchester
Speedodometer Co.
1557 B'way, New York

The Ardrey Vehicle Washer

Patented Aug. 15, '05

Will Wash Vehicles Perfectly. Quickly attached to hose. Will **not** scratch varnish. No cold, wet hands. Solid brass.

Price $3.00, prepaid. Booklet free.

Ardrey Vehicle Washer Co.,
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ARDREY WASHER

BURRITT'S CEDAR CHESTS

For Automobile Fur Coats. You cannot afford to take chances, and you should not use nauseating camphor compounds. Buy a hand-made, sweet-scented

CEDAR CHEST

They are handsome in appearance, dull-finished paneled exteriors, with bronze trimmings. Size, 43 x 23 x 18. Add a cushion and they make ideal window seats. **The only perfect protection against the moth pest.**

Write for booklet "F." It describes, illustrates, and gives prices. You want it.

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THE RECOGNIZED STANDARD

The Name is stamped on every loop—

The Velvet Grip CUSHION BUTTON **CLASP**

LIES FLAT TO THE LEG—NEVER SLIPS, TEARS NOR UNFASTENS

Sample pair, Silk 50c., Cotton 25c. Mailed on receipt of price.

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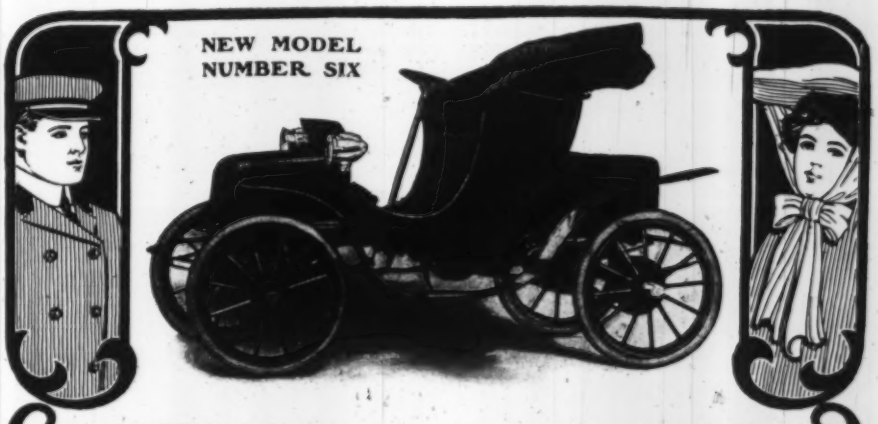
ALWAYS EASY

NEW MODEL NUMBER SIX



BABCOCK ELECTRIC VICTORIA PHAETON

Easy to Operate—Easy to get into—Easy to ride in—Easy to keep clean in—Easy to get out of—Easy to maintain

PRICE COMPLETE, $1,600.00. All Necessary Equipment Included

No expense has been spared to bring this new No. 6 car up to the very highest standard of carriage making.

While it is built along the lines of the most approved types, it possesses an added grace, luxurious style, and fine finish that give it a distinguished appearance not found in any other car on the market.

Owing to its high speed and long mileage, it is well adapted to both business and pleasure.

This carriage will show a speed of twenty-six miles an hour for short spurts. The regular running speed is from thirteen to eighteen miles per hour, and when properly operated, over good level macadam roads, it will travel from seventy-five to eighty-five miles on one charge of the batteries. A mechanical duplicate of this car recently made a run from New York to Philadelphia (100 miles) without recharging the batteries.

OTHER DESIRABLE FEATURES

The body is of the "Victoria" type, with full "Victoria" top, equipped with continuous leather fenders.

It is upholstered in either blue or green broadcloth, the body being painted to match.

TIRES. 32 x 3 inches. Special Clincher No. 410. WHEELS. 32 inches front and back.

DRIVING GEAR. (Double chain) is so constructed as to be very flexible and noiseless (no shirring), and starts smoothly.

BRAKES. Powerful expanding brakes in hub of both rear wheels and auxiliary brake on motor counter-shaft.

RANGE OF SPEED. 6 to 26 miles per hour. WEIGHT. About 1,600 pounds.

MOTOR AND CONTROLLER. 1½ H.P. (normal), with 300 per cent. overload capacity. Is suspended from chassis under seat. Our own design, with four forward speeds and the same reverse, in addition to which there is an accelerator lever which increases each one of these four speeds.

Don't make the mistake of deciding to purchase *any car* until you have examined further into the merits of this one. Your name and address on a postal will bring you full information concerning our complete line of Electric Carriages. After you have seen what we offer, you will never be satisfied until you own one of our cars; then *you will always by perfectly satisfied.*

BABCOCK ELECTRIC CARRIAGE COMPANY, BUFFALO, N. Y.

One-Piece Lava Burners

FOR ACETYLENE

Von Schwarz *Standard of Merit* AND **Crescent** *Highest Efficiency*

EVERY BURNER GUARANTEED

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Hall's Hair Renewer has been sold for over sixty years, yet we have just changed the formula, the style of bottle, and the manner of packing. The new is a vast improvement over the old in every way. As now made, it represents the very latest researches, both at home and abroad. A high-class and thoroughly scientific preparation.

Falling Hair—Promptly checks falling hair. You save what you have and get more, too.

Dandruff—Removes all dandruff at once, and prevents its further formation.

Ask for "the new kind"

The kind that does not change the color of the hair.

Formula: Glycerin, Capsicum, Bay Rum, Sulphur, Tea, Rosemary Leaves, Boroglycerin, Alcohol, Perfume.

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Some letters are merely read and thrown away. Others are filed away and become valuable documents of record, referred to again and again.

If your correspondent pays you the compliment of preserving your letters, pay him the compliment of writing them upon paper that will stand filing.

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is hard to tear, hard to wear, and lasts and lasts.

That OLD HAMPSHIRE BOND is good paper for commercial stationery is the testimony of discriminating business men—many of them have told us it is the best. Prove this for yourself—have your printer show you the OLD HAMPSHIRE BOND Book of Specimens, *or better still, write us for a copy.* It contains suggestive specimens of letterheads and other business forms, printed, lithographed and engraved on the white and fourteen colors of OLD HAMPSHIRE BOND. *Please write on your present letterhead*

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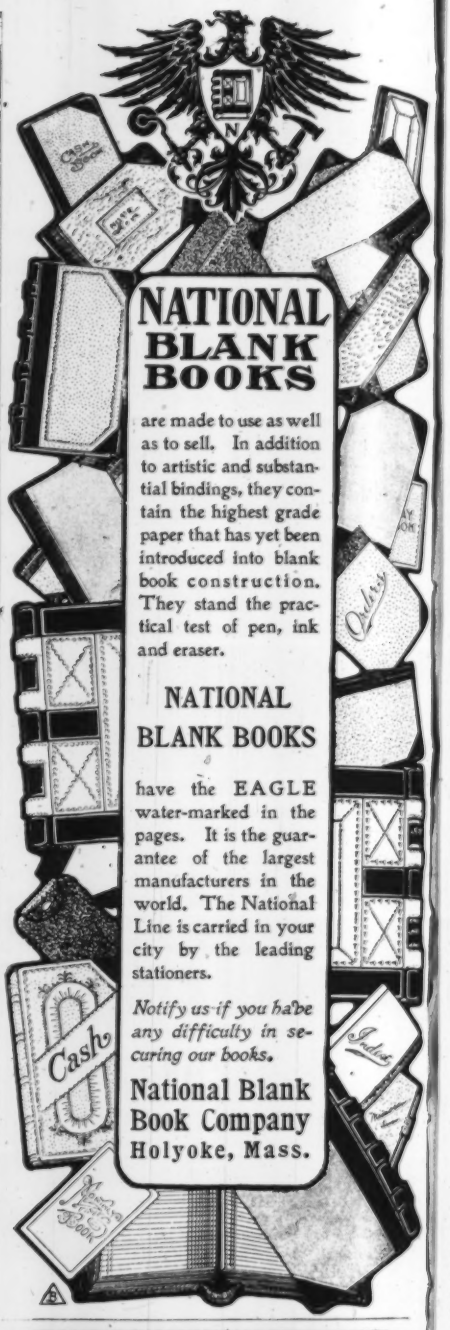
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A BOY'S VACATION ABROAD

BY C. F. KING, Jr.

C. F. KING, Jr.

A DIARY COVERING A SIX WEEKS' TOUR OF EUROPE, WRITTEN IN AN EASY, BRIGHT, ENTERTAINING STYLE BY A 17-YEAR-OLD SCHOOLBOY ON HIS FIRST VISIT TO THE OLD WORLD.

"THE BOSTON GLOBE" AND OTHER METROPOLITAN NEWSPAPERS DECLARE THAT AS A BOOK OF TRAVEL IT IS A TRUE REVELATION.

NOT A DULL MOMENT IN THE BOOK

LIFE ON BOARD ENGLISH, ITALIAN AND RUSSIAN STEAMSHIPS AND ON EUROPEAN TRAINS DESCRIBED IN A GLEEFUL, BOYISH MANNER. ALL THE POINTS OF INTEREST AND THE SIGHTS OF EUROPE MAY BE SEEN AND ENJOYED BY A READING OF THIS UNIQUE BOOK.

NOTHING LIKE IT EVER PRINTED BEFORE

LONDON, PARIS, LUZERNE, THE ALPS, ATHENS AND CONSTANTINOPLE TAKE ON A NEW CHARM WHEN DESCRIBED IN THIS YOUNG AUTHOR'S EASY, BOYLIKE SPICY STYLE.

A BOY'S VACATION ABROAD is a book that will be enjoyed alike by old and young.

ILLUSTRATED WITH 68 SPLENDID PICTURES REPRODUCED FROM SNAPSHOTS MADE BY THE AUTHOR.

The book is printed upon Irish linen bond paper, deckle-edge, bound in red silk with gold mountings and topped with gold.

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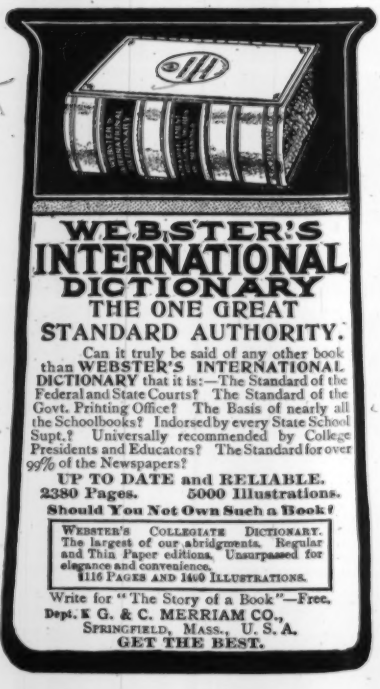
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SPRINGFIELD, MASS., U. S. A.
GET THE BEST.

A Witty Painter

WHILE Fritz Thaulow, the distinguished Dutch artist who died the other day, was serving his turn on the International Jury of Awards of the Carnegie Institute, provisions for his stay in Pittsburg were made at a hotel which accommodates guests on either the American or the European plan; the dining-rooms à la carte and table d'hôte are separate. For his first dinner Thaulow stepped to the entrance of the American room and was instantly met by the attentive head waiter, who inquired respectfully:

"European, sir, or American?"

"European!" responded the astonished Thaulow.

"The other side, sir, if you please."

"Oh, very well! I sit mit mine own people."

The thing that most delighted Fritz Thaulow during his stay in Pittsburg was the elaborate provisions furnished for bathing, and made necessary by the Pittsburg atmosphere. Thaulow fairly revelled in his porcelain and marble tub, the tessellated pavement and silvered plumbing. One night Mrs. Henry Frick had him to dinner. In a lull of the conversation he turned to his hostess with the thought uppermost in his mind.

"You take a bath effry day?" he blurted.

It was admitted.

"I beat you!" cried Thaulow with a boy's delight. "I take two."

No Use

THE coroner of a certain town in central Pennsylvania was once called upon to hold an inquest over the remains of a Hungarian laborer.

The only witness was a lad of the same nationality, who spoke no English.

"Where do you live, boy?" was the first question of the coroner.

The boy shook his head.

"Do you speak English?" next came from the coroner.

Again the boy shook his head.

"Do you speak German?"

Still another negative from the lad.

"Do you speak French?" was the next interrogatory.

For the third time the boy shook his head.

"How old are you?"

No reply from the witness.

Then, after a pause, the coroner asked:

"Do you speak Italian?"

The lad remained silent.

"It ain't no use," observed the coroner, turning to those in the room. "I've questioned this here witness in four languages and can't get no answer. The court is adjourned."

The Only Way

ONE Sunday morning recently the pastor of a church in a town of western Massachusetts remarked to his wife, upon returning from service:

"Mary, there was a stranger at service this morning."

"What did he look like?" asked the wife.

"I don't know," was the answer, "for I didn't see him."

"Then how did you know he was a stranger?"

"Because I found a dollar in the contribution-box," replied the pastor.

Misunderstood Him

ONE day an army chaplain saw a soldier, by the name of McDonnell, making for the back door of a saloon.

"McDonnell!" the chaplain shouted,—"McDonnell! Oh, McDonnell!"

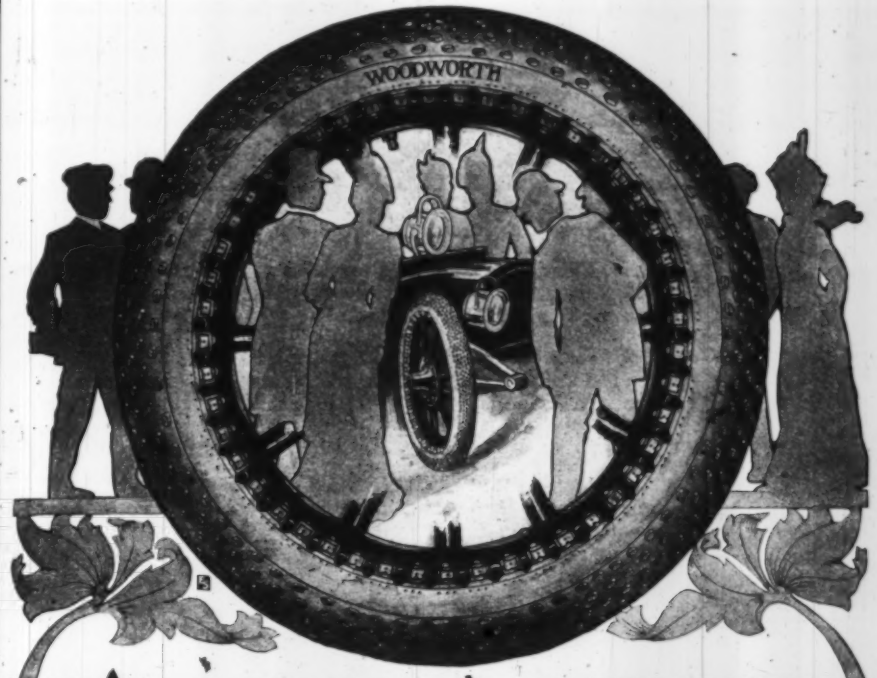
McDonnell turned, gave him a hasty look, frowned, and darted into the bar.

The chaplain loitered outside the door till McDonnell came forth again.

"McDonnell," he said, reproachfully, "didn't you hear me calling you?"

"Yes, sir," McDonnell answered, "I did; but—but I only had the price of one drink."

MORE PEOPLE ARE INTERESTED IN THE SAFETY, COMFORT AND ECONOMY THAN IN THE EXCESSIVE SPEED OF THE AUTOMOBILE



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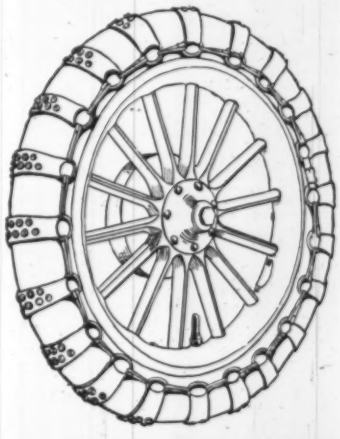
DETACHABLE TREAD ADJUSTABLE

For the PROTECTION and SAFETY of the TIRE, the TOURIST, and the AUTOMOBILE.

The "Woodworth Tread" Prevents Skidding, Makes the Course of the Car More Controllable, Protects the Tire against rough roads, hard usage, blisters, bulges, blow-outs and punctures; Makes the Tire Last Two or Three Times Longer, Saves More than Half the Tire Bill, Makes Automobiling Safer, More Comfortable and Much Less Expensive; Protects the Car against Accidents, Damage, and perhaps Demolition, and its Occupants against Dangerous if not Fatal Injuries.

Sizes	Prices	Sizes	Prices	Sizes	Prices	Sizes	Prices
26 x 2½	$8.00 each	30 x 2½	$12.00 each	32 x 4	$18.00 each	36 x 3	$18.00 each
26 x 3½	10.00 "	30 x 3	13.00 "	34 x 3	16.00 "	36 x 3½	19.00 "
26 x 3	11.00 "	30 x 3½	15.00 "	34 x 3½	18.00 "	36 x 4	20.00 "
28 x 2½	11.00 "	30 x 4	16.00 "	34 x 4	19.00 "	36 x 4½	22.00 "
28 x 3	12.00 "	32 x 3	15.00 "	34 x 4½	20.00 "	36 x 5	25.00 "
28 x 3½	14.00 "	32 x 3½	16.00 "	34 x 5	23.00 "		

WOODWORTH "KANT-SKID"



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Sizes	Price Per Pair	Sizes	Price Per Pair
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30 x 2½ or 3 } 32 x 2½ or 3 }	10.00	30 x 4½ or 5 } 32 x 4½ or 5 }	12.00
28 x 3½ or 4 } 30 x 3½ or 4 }	10.50	36 x 3½ or 4	12.00
		34 x 4½ or 5 } 36 x 4½ or 5 }	13.00

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THE OLDEST AND MOST SUCCESSFUL MAKERS
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MELODANT A NEW AND EXCLUSIVE FEATURE OF THE ANGELUS

In every composition there runs a vein of melody commonly called the "air," frequently lying wholly in the treble, sometimes interwoven with the accompaniment or wholly covered by ornamentation.

The function of the MELODANT is to automatically pick out and accent the melody notes, even when such note or notes appear in the midst of a full chord, giving to each its proper value as previously determined in an authentic interpretation.

This most desirable and long-sought-for effect is obtained in the MELODANT ANGELUS by the performer simply using the pedals in the ordinary manner. Thus with an ANGELUS equipped with the MELODANT the performer has at his command two methods of accentuation.

He can accent either, automatically by means of the MELODANT, or by his own manipulation of the Melody Buttons, which have been and which still are one of the most valuable features of the ANGELUS.

NO OTHER PIANO-PLAYER CAN OFFER SO MUCH

The addition of the MELODANT does not impair the efficiency nor detract from the value of the simple yet complete expression devices also found upon the ANGELUS. These will still be the means for individual interpretation, which to many persons constitutes the chief and unrivaled charm of our instrument. The ANGELUS is absolutely the only piano-player with whose aid the best artistic results can be obtained.

The ANGELUS in cabinet form, the KNABE-ANGELUS PIANO, the EMERSON-ANGELUS PIANO—are all equipped with the MELODANT.

The introduction of the MELODANT is another step forward in the steady progress of the ANGELUS, which has been continuously developed from the pioneer piano-player—brought out in 1895—to the truly wonderful instrument of to-day

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THE WILCOX & WHITE CO.

Established 1876 MERIDEN, CONN.

THE HORSE OF THE FUTURE, AND THE FUTURE OF THE HORSE

(Continued from page 383.)

which tend to bankrupt an automobile-owner, spiritually as well as financially. Too often the material used is fragile. Under the terrible strain to which it is subjected over our American roads something quickly gives way. Some of our manufacturers charge from four hundred to twelve hundred per cent. profit for supplying and attaching a broken part. That the industry, under such a terrible handicap, not only survives, but actually prospers, is conclusive evidence of its wonderful inherent vitality. Again, our motor-cars have not been reliable; they could not be depended upon. When a man takes hold of the knob of his office door he knows that, year in and year out, the knob will perform its proper function. When the housewife sits down to her sewing-machine she knows that hardly once in a thousand times will it fail to do its work, and do it well. Unreliable is an indictment to which our cars must too often plead guilty. In America we have done a lot of foolish things in motor-car building, but we are approaching saner methods and more correct lines. The car of the future, either for business or pleasure, has not yet been laid down. He would be a bold, perhaps a rash, prophet who would undertake any detailed description of this car. Nevertheless, reasoning *a priori*, there are some features we may prognosticate. In the first place, it will be built of better steel than we have been accustomed to use. In the next place, the cars will become standardized, and when standardized they will be built by machinery in enormous quantities at an exceedingly low cost. The wheels will be large, built of wood and of the artillery type. Hard rubber or some enduring substance will take the place of the present high-priced unsatisfactory pneumatic tires. The car will be light, simple, strong, and easily kept in repair. Mr. Edison once said the automobile will never be wholly practical until it is fool-proof and the ordinary repairs can be made on the highway by a darky with a monkey-wrench. The present highly unsatisfactory system of change-speed gears will be supplanted by a variable-speed device. There are not wanting good judges who believe that the problem will be solved by a system of hydraulic transmission. The fuel of the future will be kerosene or grain alcohol. Thirty-five per cent. of the population of America are farmers. The farmer will be the chief automobile owner and user. The maximum speed of his car may be only twenty miles per hour, but that is twice as fast as his present mode of travel. The car will be an invaluable adjunct to his work on the farm. The adjustment of a belt, the turn of a crank, and the automobile-engine furnishes power to thresh his grain, cut his woods, chop his feed, and pump his water. After being in constant use all the day, the car is ready to take the entire family to the social gathering in the village at night, or to church services on Sunday morning. The farmer will use the automobile as will the butcher, the baker, and the storekeeper—when he can in no other way get the same amount of work done at so low a cost; and when the business man can deliver his goods more quickly and more economically than he can by using the horse he will do so.

There will always be motor-cars *de luxe* for the rich, but they will be merely the fringe of the garment of a great industry. The countless millions of tons of freight now slowly and painfully drawn over country roads and through city streets by poor dumb brutes will go spinning along, the motors of the heavily laden trucks humming a tune of rich content, and all the thousand tongues of commerce will sing the praises of the motor-car.

Let me suggest a few practical things that the tireless horse of the future will accomplish:

1. It will solve the problem of the overcongestion of traffic in our city streets.

2. It will free the horse from his burdens. A few years ago, in the city of New Orleans, an old darky came in from the country and for the first time saw the electric street-car, which had taken the place of the mule-drawn car. The old darky threw up his hands, and looking up to heaven, said, "Bress de Lord, de white man freed the nigger, now he done freed de mule."

3. The automobile will furnish relief to the tenement-house districts.

4. It will stimulate the good-roads movement throughout the United States.

5. It will save time and space and become invaluable to the physician, to the fireman, and to many classes of citizens.

6. It will tend to break down class distinction, because one touch of automobilism makes the whole world kin.

As to the future of the horse, man's best-beloved friend among the dumb animals, as a beast of burden, he will be largely replaced by the motor-car. No one who has observed horses in our city streets during the last storm, slipping and falling on the hard pavement, but could wish that they could be emancipated from such work. This consummation, so devoutly to be desired, will come to pass. The horse will not go out of use, but he will be used only for light work—for riding and for pleasure driving. There may not be so many horses in the world a century hence, but they will be better horses, better bred, and more kindly and humanely treated. The motor-car is to emancipate the horse, and it is to solve many problems that cannot now be enumerated. In short, the automobile is to become the ready, tireless, and faithful servant of man throughout the world where civilization has a home or freedom a banner. Yesterday it was the plaything of the few, to-day it is the servant of many, to-morrow it will be the necessity of humanity.

CARBORUNDUM

Carborundum Grinding Wheels save money in the manufacture of

AUTOMOBILES

They do their work so much more accurately and uniformly than other grinding wheels—
They cut so much faster and last so much longer before wearing out that they are a distinct money saving force in any grinding department—
They are now used exclusively by many of the leading automobile manufacturers.

Free Sample of Carborundum for Valve Grinding

We believe Carborundum Powder to be the best thing ever produced for grinding valves of motors—
We want as many people as possible to know about it, and with this end in view will be glad to send to manufacturers sample packages to be placed in tool-kits.

Let us send *you* the Carborundum Book.

THE CARBORUNDUM COMPANY
Niagara Falls, N. Y.

PEARS'

SOAP

"As sweet as a peach" and "as smooth as satin" is baby's skin after a bath with Pears' Soap

Matchless for the Complexion

GRAY MOTORS

Gray Motors
Wonderful Boat Engines

6 H. P. COMPLETE $97.50
Engine and Boat outfit, including everything but tank and piping, all ready to put in your boat (not bare).

Elevated timer.
Timer gears encased.
Float Feed Carbureter.
Long bearings.
Engine is reversible and runs in either direction.
Counter-balanced cranks.
Starts without cranking.
Positive oiling device for crank pins.
Drop forged crank and connecting rod.
Hand-hole plate in base for quick examination of connecting rod bearings.
Ball bearing thrust.

Write for prices and description of our 2½ h. p. Motor, the lowest priced Boat Motor ever sold.

Workmanship, material and equipment taken into consideration. Just as well built in every detail as our $700 motor. Suitable for canoes or row boats, or 14 foot launches and upwards.

The High-grade Engine at a Low Price.

Made in 1, 2, 3 and 4 cylinder sizes.

Built in the most modern and up-to-date plant in the world, devoted exclusively to the building of 2 cycle Marine Engines and guaranteed by a responsible firm. 2½ to 40 Horse Power. *Write for catalog.*

GRAY MOTOR CO., 62 Leib Street, Detroit, Mich.

It Settles Down to the

Remington

This is the testimony of every typewriter user who knows by experience the relative performance of writing machines.

The man of all men who swears by the Remington is the man who has tried to get the same service out of some other machine.

A man may know the Remington or he may know some other typewriter, but the man who really knows typewriters is the man who knows the difference between the Remington and others.

Remington Typewriter Company.
New York and Everywhere

Don't go out in your Automobile without having in your kit

POND'S EXTRACT

You'll find it most useful in an emergency. An accident may meet you at any turn of the road, but you're master of the situation if you have in your pocket a copy of the

FIRST AID BOOK

Tells you how to treat shock, sprains, wounds, fractures, and other injuries. This timely knowledge may easily prevent lifelong suffering or permanent injury.

Free Copy Sent to Any Address on Request

POND'S EXTRACT CO.
Dept. 45, 78 Hudson St., New York

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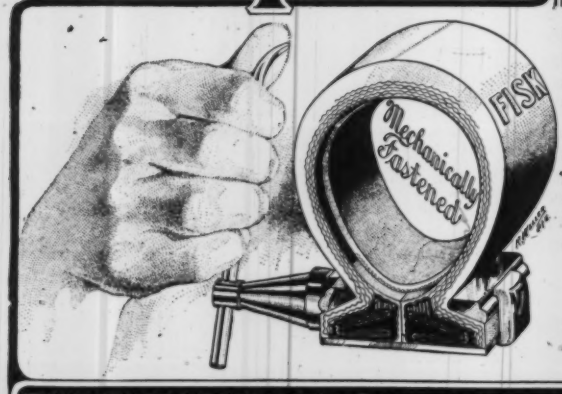
SECURELY LOCKED TO RIM
INSURING POSITIVE SAFETY



Their Exclusive Features have given FISK TIRES world-wide celebrity.
These points of advantage, combined with durability (insured by the finest quality and workmanship) have caused their enthusiastic endorsement by every one of experience.

NOTE THE AIR SPACE ALL ABOVE THE RIM!

The Fisk Rubber Co.,
Chicopee Falls, Mass.

THE FISK RUBBER CO.– CHICOPEE FALLS, MASS.

The Base Ingratitude of Mr. Dooley

THE original Mr. Dooley, now gone his way, was a character well known to George Ade, John McCutcheon, Vance Thompson, and many other Chicago newspaper men, long before Peter Dunne made him a national celebrity. It was Vance Thompson, by the way, who swooped down on the old gentleman in a sleepy hour, borrowed two dollars from him before he rightly realized it, and vanished again into the outer darkness while he was still rubbing his eyes. This little episode he subsequently referred to as "th' hurricane touch."

Similar anecdotes of the old man's wit are cherished as particular possessions. George Ade has one that he entitles "Human Gratitude." Late one night he was surprised to find the proprietor asleep behind his own bar. On being roused, that worthy showed a marked disinclination for business and a strong desire to be let alone. So Ade pulled down the blinds, stacked up the cuspidors, locked the cash register and called a cab. With some difficulty he elicited an address and then, for what seemed hours, they jounced over out-of-the-way streets until at last the cabbie drew up before a ramshackle little box of a frame house with a stairway running up the outside. All this time the passenger had slept sweetly.

Out of the cab and up the rickety stairs, puffing and blowing, Ade bundled his charge. On the top step he lost his footing and the two of them rolled higgledy-piggledy to the street. The old gentleman sat up, regarded Ade with the utmost indignation, and spoke the first words of the evening.

"Jarge," said he, "ye thripped me."

Automobile Electric Horn

THE electric horn for automobiles, an English device, is an electric buzzer, fitted to a common automobile "toot" horn. A brass cylindrical case contains a steel vibrating disk, held at its periphery by two flanges and two electro-magnets, and the rapid vibration of the disk caused by the magnetization and demagnetization of the magnets yields a sound which is magnified in volume and effectiveness by the horn. The current is provided by an eight-volt accumulator. The signal can be maintained as long as is necessary or desired, the blast being louder and more continuous than that of the ordinary wind horn, and with the switch on the steering-wheel the driver can give his warning without removing his hand from the wheel.

The Limit

A RICH man out in the suburbs who owns a large place has among the many people employed to keep it in shape an Irishman of whom he is particularly fond, on account of his unconscious wit. This Irishman is something of a hard drinker, and, as his income is limited, he is more particular as regards the quantity than the quality of his liquids. The other day the employer, who had been awaiting a good opportunity, remarked in a kind tone, as the closing sentence of a friendly lecture:

"Now, Pat, how long do you think you can keep on drinking this cheap whiskey?"

To which Pat instantly replied:

"All my life if it doesn't kill me."

A Fifty-per-cent. Saving

"Do you find it more economical to do your own cooking?"

"Yes, indeed. My husband doesn't eat half as much now as he did."

The Remedy

TRAMP. "Madam, I am suffering from indigestion."

LADY. "Why, I'm sorry. What can I do to help you?"

TRAMP. "Madame, you can cure me instantly by giving me something to digest."

$7.50 "STOP" WATCH

¾ ACTUAL SIZE

FULLY GUARANTEED

Every Motorist will enjoy the possession of a watch that is unfailing in its recording of all speed tests. This

NEW YORK STANDARD "STOP-WATCH"

is the only one made in America, and has a 7-jewel movement. It is the only one made anywhere in the world that is

FULLY GUARANTEED

For all purposes where a 1-5 second record is desired this watch will give accurate service. (For Sale by all Jewelers.)

Illustrated Booklet, showing other styles and prices, will be sent UPON REQUEST.

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Try this Delicious Cocktail

¼ Grand Marnier
¾ Dry Gin

Grand Marnier
LIQUEUR

A specially choice luxury. The finest of all liqueurs. It appeals to those of refined taste and discrimination.

Made in France since 1827

Sold Everywhere

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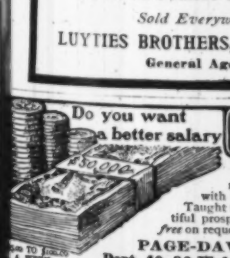

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No. 1 VIENNA ART PLATE

Metal Vienna Art Plates

No. 1. Original was painted by Herr Wagner, the eminent German artist. The reproduction (on metal) brings out perfectly the rich coloring of portrait and decorative border, equaling the original.

No. 2. An exact reproduction in original colors (on metal) of the work of P. Rall, a French artist of note, whose fine skill in portraiture and exceptional decorative ability are evidenced in every line.

See below how to secure these plates.

ANHEUSER-BUSCH'S *Malt-Nutrine*

How to Secure a Plate

Malt-Nutrine is put up in cases of one dozen bottles and is sold by druggists and grocers. To secure one of the plates **send 12 Tops of Red Metal Caps** from Malt-Nutrine bottles, **also** 15c. in stamps or money to cover postage. Designate the plate you want by stating No. 1 or No. 2.

Malt-Nutrine Dept. 44
Anheuser-Busch Brewing Ass'n
St. Louis, U. S. A.

MALT-NUTRINE is a predigested liquid-food—easily assimilated by the weakest and most delicate stomach. It promotes appetite, aids digestion and assures healthful and refreshing *sleep*. The ideal tonic for nursing mothers and convalescents.

No. 2 VIENNA ART PLATE

NEW MODEL No. 8 NOW ON SALE

Blickensderfer Typewriters

STAMFORD, CONN. Send for Catalogue C

The Springfield Motometer

"The Speedometer that Has Proved It"

A well-tried and thoroughly dependable instrument, registering speed, distance of each trip and season's mileage.

A **good** (which means **accurate**) Speedometer is a necessity. A poor or unreliable one is a **dangerous nuisance.**

The "Springfield" offers you **absolute reliability**, PROVEN by a show demonstration that leaves **no room for doubt** and backed by two seasons of **practical use.**

It gives you **Correct Principle, Beautiful Workmanship, Handsome Appearance, Durability,** and above all **Absolute, Proven, Guaranteed Accuracy,** and all this at A FAIR PRICE.

Specify the "Springfield" on your car and **you will get it.**

If you "want to know," send for Catalog and booklet "Facts."

50 mile pattern, $45.00 — FOR ANY CAR MADE — 60 mile pattern, $50.00

The R. H. Smith Mfg. Co.
SPRINGFIELD, MASS.

Established 1865 — Incorporated 1883

Capt. John Ericsson

"One of the few, the immortal names,
That were not born to die."

ERICSSON was precocious in childhood; born in 1803, at a small town in the mining region of Sweden, at the age of ten years he designed a pump to drain the mines, and, before his majority, a machine for engraving and a flame-engine. His younger manhood comprises a whole series of inventions. Among them are surface condensation, as applied to steam, and compressed air for conveying power. In the forties he caused a revolution in naval warfare by the application of the screw propeller to vessels of war, and his naval inventions culminated in the construction of the Monitor of national renown, familiarly known as the "Little Cheese-Box on a Raft," which went out to meet the Merrimac and to victory on that memorable March day of 1862. This invention compelled the reconstruction of every great navy of the world, along the lines laid down by Ericsson, and was of such wide-reaching effect as to cast around his name an international fame so great as to eclipse all other useful products of his wonderful genius. Comparatively few people are, therefore, aware that Ericsson invented the caloric engine, through which hot air successfully takes the place of steam, and at a great saving in expense for all operations requiring moderately low power; as, of course, much less fuel is required to heat air to some expansive power than is needed for the turning of water into steam. *Herein lies the chief economy of the Hot-Air Pump*, which was really Ericsson's pet invention, and in improving which he spent many years of an exceedingly active life. There are various imposing monuments the world over to the memory of the great inventor and patriot; yet those who knew Ericsson best will testify that the kind of memorial which would please him most, were the choice his own, would be every one of his Hot-Air Pumps, which he knew of, as delivering its Domestic Water Supply into the homes of the civilized world. Is it asking too much, then, of every buyer of a Hot-Air Pump to give a thought to the memory of its great inventor and what his life meant to mankind?

Over 40,000 Hot-Air Pumps are now in use.
Write to nearest office for Catalogue **H. W.**

Rider-Ericsson Engine Co.

37 Warren Street, New York
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The Ericsson Caloric Engine or Hot-Air Pump.

CLIMAX ELECTRICAL COMMUTATOR

Does away with all vibrating coils and timer.
Insures explosions at right time and keeps each cylinder doing its proper share of work.
No readjustment necessary.
Prevents uneven running of engine.
Saves gasoline, saves half repair bill, saves your temper.
Can be applied to any engine.

Write for particulars.

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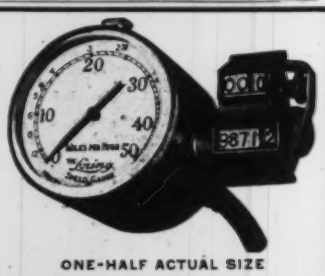
A Speed Indicator For Your Car

Just such as you want; not too large and cumbersome, but with a clear dial easy to read, and a pointer that will follow closely and smoothly every change of the speed without tremble or quiver of any kind, whatever the road may be. Centrifugal in its action for true reliability and with all the moving parts in perfect balance, as the lack of balance would disturb the hand. The Loring is the ONLY balanced centrifugal speed indicator. Write to-day for circular.



ONE-HALF ACTUAL SIZE

LORING SPEED GAUGE WINTER HILL STA., BOSTON, MASS.

China's Home-made Railroad

THE first railroad in China built by Chinese capital has just been completed and opened to public traffic. The length of the line is thirty miles, and it has four stations between the terminals, Chaochowfu and Swatow. The grade of the road is low, with very few curves. Japanese hard-wood crossties, and American steel rails, angle bars, and spikes were used in the construction of the line. The road's motive power consists of three fifty-four-ton locomotives of American manufacture. The coach equipment of the company consists of twenty-two cars of Japanese manufacture, built on the corridor plan. They have a seating capacity of fifty passengers to a coach. The first-class cars are fitted with seats in imitation of American patterns, and are upholstered in pantesote; the second-class carriages have only plain wooden benches. The couplers are of the automatic type used in this country.

A standard train consists of fourteen coaches and a guard's van. The latter is the only car equipped with brakes, the American air-brake on the locomotive being relied on to handle the train with safety. Six freight-cars complete the list of the company's rolling stock.

Prior to the formal opening of this road, trains had been running for eight days, three a day, each way, and the daily average number of passengers carried was 2000. The fare from Chaochowfu to Swatow is sixty-seven cents (gold) each way for first-class accommodation, and twenty-seven cents for second-class. The thirty miles are run in about an hour and a half.

At present the line is continually guarded by armed men stationed at intervals of about one mile. The enginemen, conductors, and train-despatchers are all Japanese, but the ticket-collectors on the trains and all the other employees are Chinese. The train-despatching is done by telephone.

Our Frugal Soldiers

ALTHOUGH the American soldier is not highly paid, he must be considered a thrifty fellow when his saving temperament comes to light. Last year 54,260 enlisted men saved and deposited with the paymaster's department $1,495,228. This quite respectable sum represents about twelve per cent. of the total pay of all the enlisted men for that period. There are but few wage-workers who can boast even a ten-per-cent. saving out of their earnings. Had every enlisted man made a deposit, the average saving for the year would have been $27 50, but that is the least interesting feature of the system. The figures show that the soldier can deposit, under the law of 1872, only sums of $5 and over. As the pay is small, the total deposits for the year show that the saving habit is continuous with many enlisted men.

These deposits bear interest at the rate of four per cent. per annum, but they cannot be withdrawn until the soldier receives his discharge. Last year there was repaid to ex-soldiers the sum of $1,168,236; interest was also paid to the amount of $70,112. The number of men discharged is unobtainable, but the amount repaid shows that their average saving must have been considerable.

Since the enactment of the law of 1872 the total deposits have amounted to $27,789,553, and discharged soldiers have received $1,582,993 in interest on deposits withdrawn. There remains on deposit with the paymaster-general the sum of $2,911,737.

Probably Catching

A YOUNG matron of Baltimore, upon entering her nursery, found her youngest in tears.

"Why, what's the matter with Harry?" she asked the nurse.

"He's mad, mum," explained nurse, "because I wouldn't let him go to the Simmonses' acrost the strate."

"And why wouldn't you let him go, Norah?"

"Because, mum, they're havin' charades, so he said, an' I wasn't sure whether he had thim or not."

Underberg

THE WORLD'S BEST

Bitters

Delicious to the palate, good to the stomach, and the best appetizer known. The original, favorite, cordial liqueur.

ENJOYABLE AS A COCKTAIL AND BETTER FOR YOU.

Used before and after meals it prevents indigestion. Far superior to alcoholic stimulants. It cheers and invigorates, healthfully and permanently.

The tastiest of all bitters for sherry or mixed drinks is "UNDERBERG."

Over 6,000,000 bottles imported to United States.

At all Hotels, Clubs and Restaurants, or by the bottle at Wine Merchants and Grocers.

Bottled only by H. Underberg Albrecht, Rheinberg, Germany, since 1846.

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Club Cocktails

ABOTTLED DELIGHT

Seven Kinds
The most popular are Martini (Gin Base), Manhattan (Whiskey Base)
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BALDWIN IMPROVED SPRING RECOIL CHECK

is superior to any supplementary spring-control device made, because it has qualities not possessed by others, and especially one feature, to wit:

A graded control over the recoiling springs. This control increases in proportion to the effort on the springs. It is least at the initiative, and the highest power is exerted at the final action, where it is needed. This insures easy riding over smooth roads as well as rough roads.

Made to fit all kinds of cars. No oiling or adjusting necessary.

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Style 61

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AN efficient lighting equipment is imperative for night running. That equipment should be as carefully selected as your engine.

Unless it is absolutely dependable, unless it bears the name of a manufacturer with a reputation to uphold, it is more dangerous than no equipment—for with no equipment you would not venture forth on dark, hazardous roads.

GRAY & DAVIS LAMPS

represent not only the highest attainment in the production of automobile lighting equipment, but the name is, in itself, a guarantee of honest quality and workmanship—of a reliability which eliminates the element of uncertainty.

Equip your car with Gray & Davis lamps and generator and go forth with the assurance that when you want light—*and as long as you want it*—your Gray & Davis equipment will guarantee it. Send for Catalogue.

Gray & Davis, AMESBURY, MASS.

The Woman In The Case

—mother, wife or daughter—is entitled to the

Unfailing Protection of Life Insurance

The ticking of the seconds should remind you that procrastination is the thief, not only of time, but of money, opportunity and family happiness. Delay in Life Insurance may deprive your family of their future support, comfort and education. A Life Insurance policy in

The Prudential

is the husband and father's greatest and most practical evidence of his affection for "the woman in the case."

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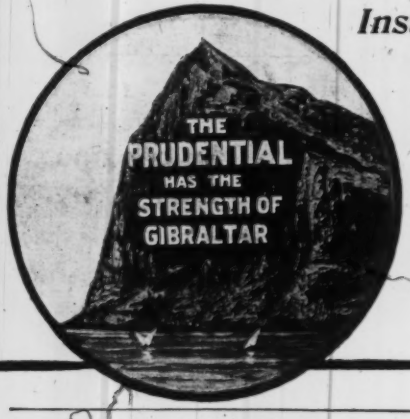

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Made in England of the finest Sheffield rolled steel, BALL-POINTED pens are *more durable*, and are ahead of all others

FOR EASY WRITING.

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The Care of Lamps and Generators

By William Gray

THE evolution of the auto lamp is as pronounced as the evolution of the auto itself; and as the first automobile closely followed the carriage in design and construction, so the first lamp that was used on the automobile was the carriage lamp. These carriage lamps were found to be unsuitable for the fast-moving auto. The carriage lamp that burned perfectly on a carriage was found to be absolutely useless on the automobile, the construction of the carriage lamp being too light for the vibration caused by the pounding of the engine and the rapid movement over rough roads. A first-class automobile lamp should be of graceful design, and the method of lighting should be given very careful attention. Oil-lamps, as a rule, give very little trouble, but the acetylene gas used for search-lights will cause considerable annoyance if not generated in a proper way and carried to the lamps by clean, dry tubes.

Two systems of generating gas are in vogue at the present time; one, the drip system, allows the water to drop from the tank on to the carbide. The gas thus generated holds back the water, and on rough roads the water drops faster and therefore more gas is generated than is needed. The other system is the compensating system, the water being led from the tank by a pipe to the bottom of the generator, and vibration, therefore, does not affect the flow. This system of generation has been used extensively abroad and is fast becoming popular in this country. There are many arguments brought forward for and against the different classes of lamps on the market, but the principal thing to be considered is the reliability and reputation of the manufacturer, and the principle of optics on which the lamps are constructed.

Many arguments are brought forward in favor of the lens mirror because of the amount of light projected by this system. The only shaft of light obtained is the pencil or long-distance ray. The majority of experienced drivers prefer a lamp that gives two rays—the pencil ray and the fan ray—as they are able to distinguish objects at a distance and at the same time run their car in a profusion of light distributed on either side.

The matter of figures may be of interest as showing the amount of light generated by the addition of the lens mirror. The naked burner gives thirty-three candle-power; when used in conjunction with the lens mirror in proper focus it gives 2000 candle-power. A few points regarding the successful handling of lamps and equipment may be valuable. In the first place, if your lamps do not burn, make sure that the pipe is clear and free and that there are no pockets or bends in this pipe to hold water or moisture. Do not attempt to find a leak in your generator or pipes by means of a lighted match. Acetylene has a strong odor and there is little trouble in detecting the location of a leak. Leaks are apt to occur around the generator gasket, at the rubber connections of the lamps, or at the top.

Lamps should be given proper care, and no great unnatural strain placed upon them. The silver reflectors should be kept clean, as a slight film of dust will affect the reflecting power very materially. These mirrors can be kept bright by using silver polish of good quality. If lamps light up quickly with a yellowish flame, it indicates a leak. When the system is in proper condition the light should start up slowly with a hissing noise and a clear white flame.

To keep your lamps in the best condition, they should be covered in rainy and muddy weather by well-fitting, water-proof covers.

An Explanation

"EFFIE," said Margie, who was laboriously spelling words from a first reader, "how can I tell which is a 'd' and which is a 'b'?"

"Why," replied Effie, wisely, "the 'd' has its tummy on its back."

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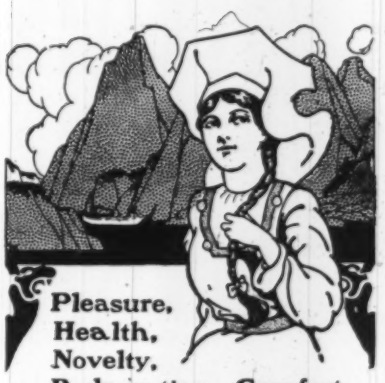

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